

156240

SEARCH REQUEST FORM

Requestor's Name: Elizabeth Mulvaney Serial Number: 10/808,517

Date: 6-13-05 Phone: (571) 272-1527 Art Unit: 1774
10 B77

Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s):

Please see attached.

STAFF USE ONLY

Date completed: 6-24-05

Searcher: EL

Terminal time: 120

Elapsed time: _____

CPU time: _____

Total time: 130

Number of Searches: _____

Number of Databases: _____

Search Site

STIC

CM-1

Pre-S

Type of Search

N.A. Sequence

A.A. Sequence

Structure (2)
(and)

Bibliographic

Vendors

IG
 STN \$919.59

Dialog

APS

Geninfo

SDC

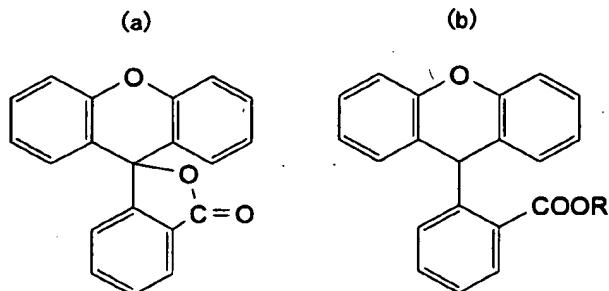
DARC/Questel

Other

What is claimed is:

1. A film comprising PMMA and a fluorescent substance having a xanthene skeleton and a lactone ring and/or a fluorescent substance having a xanthene skeleton and a group -COOR, where R represents a hydrogen atom or a substituent, capable of forming an intramolecular lactone ring, said fluorescent substances being dispersed in the PMMA.
- 5 2. The film as claimed in claim 1, wherein the fluorescent substance is a compound of the following formulae (1) (a) and/or (b):

Formula (1)



wherein R represents a hydrogen atom or a substituent.

- 15 3. The film as claimed in claim 1, which has a thickness of at most 10 μm .
4. The film as claimed in claim 1, which has a thickness of at most 1 μm .
5. The film as claimed in claim 1, wherein the fluorescent substance is rhodamine B, fluoresceine or eosine Y.
- 20 6. The film as claimed in claim 1, wherein the fluorescent substance is rhodamine B.

7. The film as claimed in claim 1, wherein the PMMA has a weight-average molecular weight of from 50,000 to 200,000.

8. The film as claimed in claim 1, wherein the content of the fluorescent substance is from 1×10^{-5} to 1×10^{-2} % by weight of the PMMA.

9. A multidimensional optical memory having a film that comprises PMMA and a fluorescent substance having a xanthene skeleton and a lactone ring and/or a fluorescent substance having a xanthene skeleton and a group -COOR, where R represents a hydrogen atom or a substituent, capable of forming an intramolecular lactone ring, said fluorescent substances being dispersed in the PMMA.

10. The optical memory as claimed in claim 9, which is a multi-layered optical memory.

15 11. The optical memory as claimed in claim 9, which is a three-dimensional optical memory.

12. A method for producing a fluorescent material containing PMMA and a fluorescent substance, which comprises a step of dissolving in a solvent PMMA and a fluorescent substance having a xanthene skeleton and a lactone ring and/or a fluorescent substance having a xanthene skeleton and a group -COOR, where R represents a hydrogen atom or a substituent, capable of forming an intramolecular lactone ring to form a solution, and a step of removing the solvent from the solution.

25 13. A method for producing a film containing PMMA and a fluorescent substance, which comprises a step of dissolving in a solvent PMMA and a fluorescent substance having a xanthene

skeleton and a lactone ring and/or a fluorescent substance having a xanthene skeleton and a group -COOR, where R represents a hydrogen atom or a substituent, capable of forming an intramolecular lactone ring to form a solution, and a step of 5 removing the solvent from the solution.

14. The method for film production as claimed in claim 13, wherein the solvent is a non-polar solvent.

15. The method for film production as claimed in claim 13, wherein the solvent is a cellosolve acetate.

10 16. The method for film production as claimed in claim 13, wherein the amount of the PMMA is from 5 to 35 % by weight of the solvent.

15 17. The method for film production as claimed in claim 13, which includes a step of forming the film in a mode of spin coating.

18. The method for film production as claimed in claim 13, which includes a step of forming the film having a thickness of at most 10 μm in a mode of spin coating.

20 19. The method for film production as claimed in claim 13, which includes a step of forming the film having a thickness of from 1 to 10 μm in a mode of spin coating.

20 20. The method for film production as claimed in claim 13, which includes a step of forming the film having a thickness of at most 1 μm in a mode of spin coating.

Include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- *For Foreign Patent Family Searches Only*
Include the country name and patent number.
- Provide examples or give us relevant citations, authors, etc., if known.
- FAX or send the **abstract, pertinent claims** (not all of the claims), **drawings, or chemical structures** to your EIC or branch library.

Enter your Search Topic Information below:

(1) The fluorescent dye of Formulas I (a) or (b) and PMMA;
(2) with optical recording (disk or disc or CD or DVD)

Special Instructions and Other Comments:

(For fastest service, let us know the best times to contact you, in case the searcher needs further clarification on your search.)

Press ALT + F, then P to print this screen for your own information.

SEND **RESET**

USPTO [Intranet Home](#) | [Index](#) | [Resources](#) | [Contacts](#) | [Internet](#) | [Search](#) | [Web Services](#)

Last Modified: 08/20/2004 10:04:50

=> file reg

FILE 'REGISTRY' ENTERED AT 17:00:50 ON 24 JUN 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 American Chemical Society (ACS)

=> display history full 11-

FILE 'LREGISTRY' ENTERED AT 14:29:02 ON 24 JUN 2005

L1 STR
L2 STR L1
L3 STR L1

FILE 'REGISTRY' ENTERED AT 15:14:18 ON 24 JUN 2005

L4 50 SEA SSS SAM L1
L5 23875 SEA SSS FUL L1
SAV TEM L5 MUL517/A
L6 50 SEA SUB=L5 SSS SAM L2
L7 5663 SEA SUB=L5 SSS FUL L2
SAV L7 MUL517A/A
L8 50 SEA SUB=L5 SSS SAM L3
L9 13892 SEA SUB=L5 SSS FUL L3
SAV TEM L9 MUL517B/A
E METHYL METHACRYLATE HOMOPOLYMER/CN
L10 1 SEA "METHYL METHACRYLATE HOMOPOLYMER"/CN
E METHYL METHACRYLATE/CN
L11 1 SEA "METHYL METHACRYLATE"/CN
E METHYL ACRYLATE HOMOPOLYMER/CN
L12 1 SEA "METHYL ACRYLATE HOMOPOLYMER"/CN
E METHYL ACRYLATE/CN
L13 1 SEA "METHYL ACRYLATE"/CN
E RHODAMINE B/CN
L14 1 SEA "RHODAMINE B"/CN
E FLUORESCEIN/CN
L15 1 SEA FLUORESCEIN/CN
E EOSINE Y/CN
L16 1 SEA "EOSINE Y"/CN

FILE 'HCA' ENTERED AT 15:35:57 ON 24 JUN 2005

L17 73871 SEA L10 OR PMMA OR POLYMETHYLMETHACRYLATE# OR (POLY(2A)(METHYL# OR ME))(2A)(METHACRYLATE# OR METH(A)ACRYLATE#) OR POLYMETHYL#(2A)(METHACRYLATE# OR METH(A)ACRYLATE#)
L18 36883 SEA L11 OR L12 OR L13
L19 7819 SEA L14 OR RHODAMINE#(A)B
L20 6189 SEA L15 OR FLUORESEIN#

L21 3450 SEA L16 OR EOSINE#(A)Y
 L22 275 SEA L17 AND (L19 OR L20 OR L21)
 L23 123244 SEA TANAKA ?/AU
 L24 3831 SEA KAWATA ?/AU
 L25 31625 SEA OKAMOTO ?/AU
 L26 1 SEA L23 AND L24 AND L25
 L27 1 SEA L22 AND L26
 E OPTICAL MEMORY DEVICES/CV
 L28 1491 SEA "OPTICAL MEMORY DEVICES"/CV
 E OPTICAL RECORDING MATERIALS/CV
 L29 3250 SEA "OPTICAL RECORDING MATERIALS"/CV
 L30 617107 SEA FILM#/IT
 L31 6 SEA L22 AND (L28 OR L29)
 L32 27 SEA L22 AND L30
 L33 16711 SEA L7
 L34 28470 SEA L9
 L35 316 SEA (L17 OR L18) AND (L19 OR L20 OR L21)
 L36 6 SEA L35 AND (L28 OR L29)
 L37 14084 SEA (L33 OR L34) AND (L19 OR L20 OR L21)
 L38 15 SEA L37 AND (L28 OR L29)

FILE 'LCA' ENTERED AT 16:37:09 ON 24 JUN 2005

L39 85 SEA CDROM# OR CD(A)ROM# OR DVD# OR (COMPACT? OR DIGITAL?
 OR OPTIC? OR RECORD? OR INFORMATION? OR STORAG? OR
 STORE# OR STORING# OR MEMOR?) (2A) (DISK? OR DISC## OR
 FLOPPY OR FLOPPIES OR MEDIA# OR MEDIUM#) OR (DIGITAL? OR
 INFORMATION? OR OPTIC?) (2A) (STORE# OR STORING# OR
 STORAG? OR RECORD?)
 L40 4 SEA HARDDRIV? OR (HARD OR WESTERN# OR DIGITAL? OR
 RECORD? OR OPTIC?) (2A) DRIVE#
 L41 34 SEA VCR OR AUDIOTAP? OR VIDEOTAP? OR (AUDIO? OR VIDEO?
 OR MEMOR? OR RECORD?) (2A) (TAPE# OR TAPING# OR TAPEING#
 OR CASSETTE#) OR BETAMAX# OR VHS

FILE 'HCA' ENTERED AT 16:49:48 ON 24 JUN 2005

L42 22 SEA L35 AND (L39 OR L40 OR L41)
 L43 141 SEA L37 AND (L39 OR L40 OR L41)
 L44 12 SEA L43 AND L30
 L45 2 SEA L42 AND L30

FILE 'LCA' ENTERED AT 16:54:42 ON 24 JUN 2005

L46 7647 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
 OVERLAI? OR LAMIN? OR LAMEL? OR SHEET? OR LEAF? OR
 FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR
 SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR
 OVERSPREAD?) /BI,AB
 L47 3138 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
 OVERLAI? OR LAMIN? OR LAMEL? OR SHEET? OR COAT? OR

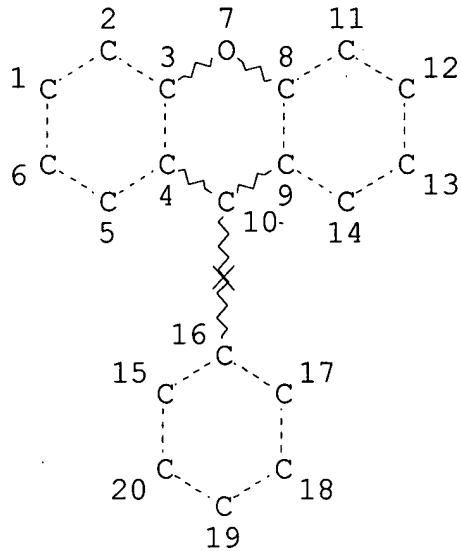
TOPCOAT? OR OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR OVERSPREAD?) / IT

FILE 'HCA' ENTERED AT 16:55:48 ON 24 JUN 2005

L48 43 SEA L43 AND L47
L49 6 SEA L31 OR L36 OR L45
L50 35 SEA (L38 OR L42 OR L44) NOT L49
L51 49 SEA (L32 OR L48) NOT (L49 OR L50)
L52 48 SEA L51 AND (1900-2003/PY OR 1900-2003/PRY)

FILE 'REGISTRY' ENTERED AT 17:00:50 ON 24 JUN 2005

=> d 17 que stat
L1 STR



NODE ATTRIBUTES:

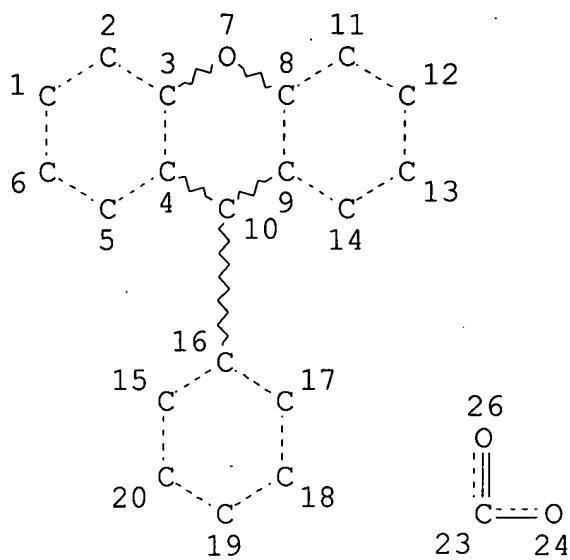
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L2 STR



NODE ATTRIBUTES:

CONNECT IS E3 RC AT 23
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 23

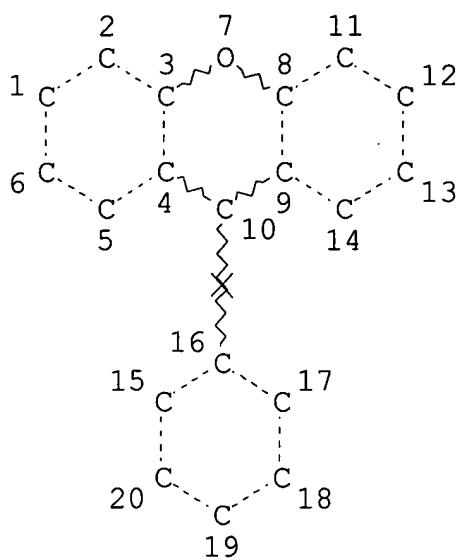
STEREO ATTRIBUTES: NONE

L5 23875 SEA FILE=REGISTRY SSS FUL L1
 L7 5663 SEA FILE=REGISTRY SUB=L5 SSS FUL L2

100.0% PROCESSED 9053 ITERATIONS
 SEARCH TIME: 00.00.01

5663 ANSWERS

=> d 19 que stat
 L1 STR



NODE ATTRIBUTES:

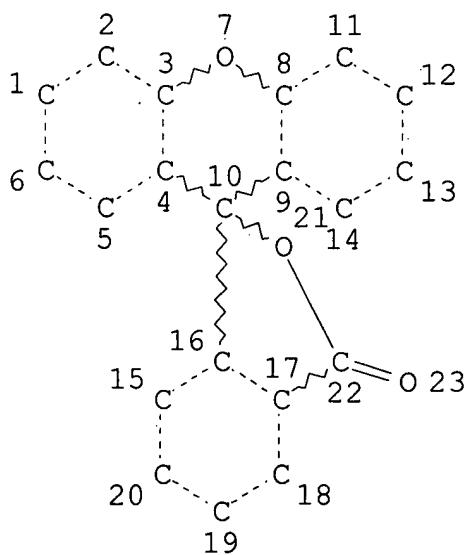
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L3 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE
L5 23875 SEA FILE=REGISTRY SSS FUL L1
L9 13892 SEA FILE=REGISTRY SUB=L5 SSS FUL L3

100.0% PROCESSED 13900 ITERATIONS 13892 ANSWERS
SEARCH TIME: 00.00.01

=> file hca
FILE 'HCA' ENTERED AT 17:01:31 ON 24 JUN 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d 149 1-6 cbib abs hitstr hitind

L49 ANSWER 1 OF 6 HCA COPYRIGHT 2005 ACS on STN
142:82384 Film, optical memory material with the film, and method for
producing the film. Tanaka, Takuo; Kawata, Satoru; Okamoto,
Takayuki (Japan). U.S. Pat. Appl. Publ. US 2004258955 A1 20041223,
23 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-808517
20040325. PRIORITY: JP 2003-175819 20030620.

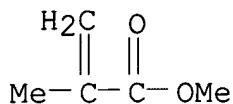
AB Films are described which comprise **PMMA** and a fluorescent
substance having a xanthene skeleton and a lactone ring and/or a
fluorescent substance having a xanthene skeleton and a -COOR group
(R = H or a substituent capable of forming an intramol. lactone
ring) dispersed in the **PMMA**. Methods for producing a
fluorescent material or a film contg. **PMMA** and a
fluorescent substance are described which entail dissolving in a
solvent **PMMA** and a fluorescent substance and removing the
solvent from the soln. Multidimensional optical memories (e.g.,
three-dimensional or multilayer memories) employing the films are
also described.

IT **9011-14-7, PMMA**
(**films** comprising fluorescent substances in
PMMA and their prepn and use as optical memories)

RN 9011-14-7 HCA
CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA

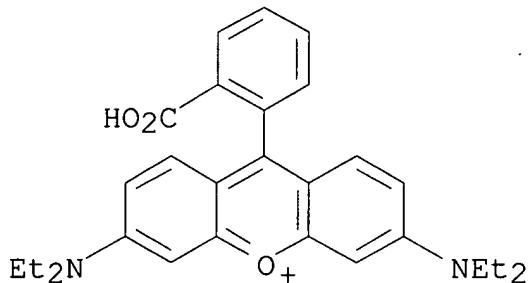
INDEX NAME)

CM 1

CRN 80-62-6
CMF C5 H8 O2

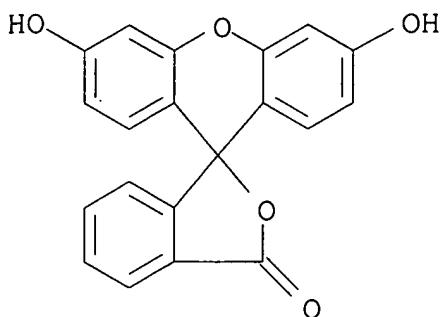
IT **81-88-9, Rhodamine b 2321-07-5**
, **Fluorescein 17372-87-1, Eosine Y**
(**films** comprising fluorescent substances in
PMMA and their prepn. and use in optical memories)

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)● Cl⁻

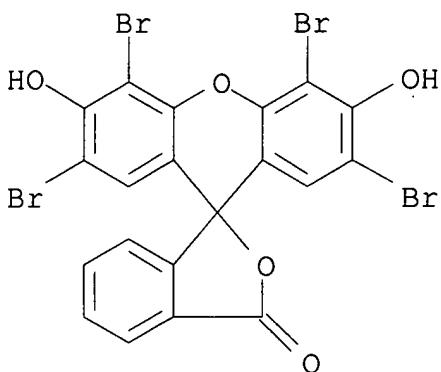
RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
(9CI) (CA INDEX NAME)



RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one,
2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA
INDEX NAME)



●2 Na

IC ICM C09K011-06

ICS G11B007-24

INCL 428690000; 428332000; 428065100; 252301350; 252301160; 427157000;
427385500

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 38

ST fluorescent dye doped **PMMA** film optical memory

IT **Optical memory devices**

(films comprising fluorescent substances in
PMMA and their prepn and use as optical memories)

IT Fluorescent dyes

Fluorescent substances

Optical recording materials

(**films** comprising fluorescent substances in **PMMA** and their prepn. and use in optical memories)

IT 9011-14-7, **PMMA**

(**films** comprising fluorescent substances in **PMMA** and their prepn and use as optical memories)

IT 81-88-9, **Rhodamine b** 596-24-7

2321-07-5, Fluorescein 17372-87-1, **Eosine**

Y 493037-53-9D, derivs.

(**films** comprising fluorescent substances in **PMMA** and their prepn. and use in optical memories)

L49 ANSWER 2 OF 6 HCA COPYRIGHT 2005 ACS on STN

141:215453 Three-dimensional multilayered Tbyte optical memory. Tanaka, Takuo (RIKEN, Nanophotonics Laboratory, The Institute of Physical and Chemical Research, Japan). Optronics, 272, 98-103 (Japanese) 2004. CODEN: OPUTDD. ISSN: 0286-9659. Publisher: Oputoronikususha.

AB A review of three-dimensional multilayered Tbyte optical memory. Three-dimensional multi-layered optical storage is one of the most promising methods that lead to the next-generation large capacity optical storage. It stores the bit information onto the multilayered recording layers inside the thick recording medium. This paper describes the recording/reading principles, the systems, and the materials suitable for three-dimensional multi-layered memory. We also present the exptl. results two types of 3D memory that using photochromic org. materials, and **rhodamine-B**-doped and Au(III)-doped **PMMA** for recording medium.

CC 74-0 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Optical memory devices**

(three-dimensional multilayered Tbyte optical memory)

L49 ANSWER 3 OF 6 HCA COPYRIGHT 2005 ACS on STN

140:294671 Three-dimensional optical storage by use of an ultrafast laser. Huang, Sumei M.; Hong, Ming Hui; Wu, Ding J.; Van, L. H.; Ong, T. S.; Luk'yanchuk, Boris S.; Chong, Tow Chong (Data Storage Institute, Singapore, 117608, Singapore). Proceedings of SPIE-The International Society for Optical Engineering, 5069(Optical Data Storage 2003), 264-268 (English) 2003. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The feasibility of multilayered optical data storage is examd. in glass, quartz, polycarbonate and a **Rhodamine B** and Au(III) doped **PMMA** medium by using a focused 800 nm, 100-fs pulsed laser. Refractive-index or fluorescent data patterns are recorded by use of an objective to focus laser pulses inside these transparent medium. The laser pulse produces a

submicrometer-diam. structurally altered region in the material. For glass, quartz and polycarbonate materials, the authors record binary information by writing such bits in multiple planes and read it out with a microscope. The authors demonstrate data storage and retrieval with 0.6-.mu.m in-plane bit spacing and 10-.mu.m interplane spacing (100 Gbits/cm³). SEM (SEM) are used to characterize structural changes in these materials. For the

Rhodamine B and Au(III) doped **PMMA**

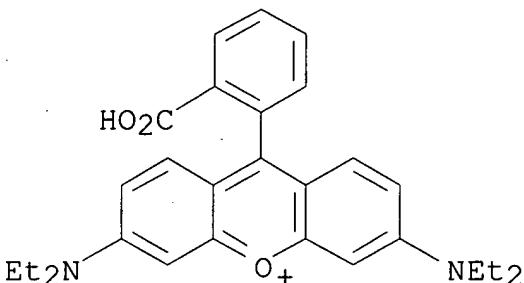
medium, fluorescent spectra are measured before and after laser treatment. Writing three-dimensional data bit inside the transparent medium based on a multi-photon absorption process is expected to become a useful method used to fabricate optical memory with both an ultra-high storage d. and an ultra-high storage d. and an ultra-high recording speed.

IT **81-88-9, Rhodamine B**

(**PMMA** doped with Au and; multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IT **9011-14-7, PMMA**

(doped with **Rhodamine B** and Au; multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

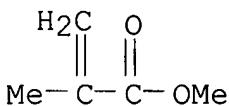
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Optical recording
(mechanism of multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT Fluorescence
Laser ablation
Optical recording materials
Reduction, photochemical
Refractive index
(multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT Glass, processes
Polycarbonates, processes
(multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT **Optical memory devices**
(multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser in relation to)

IT Laser radiation
(pulsed; mechanism of multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT **81-88-9, Rhodamine B**
(**PMMA** doped with Au and; multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT 16903-35-8, Tetrachloroauric acid
(**PMMA** doped with **Rhodamine B** and; multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT **9011-14-7, PMMA**
(doped with **Rhodamine B** and Au; multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT 7440-57-5, Gold, processes

(multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

IT 60676-86-0, Fused quartz
(multilayered three-dimensional optical storage in glass, quartz, polycarbonate and doped **PMMA** recorded by ultrafast laser)

L49 ANSWER 4 OF 6 HCA COPYRIGHT 2005 ACS on STN

138:114961 **Rhodamine-B**-doped and Au(III)-doped
PMMA film for three-dimensional multi-layered optical
memory. Tanaka, Takuo; Yamaguchi, Kohei; Yamamoto, Sadahiko
(Graduate School of Engineering Science, Division of Advanced
Electronics and Optical Science, Osaka University, Toyonaka, Osaka,
560-8531, Japan). Optics Communications, 212(1-3), 45-50 (English)
2002. CODEN: OPCOB8. ISSN: 0030-4018. Publisher: Elsevier Science
B.V..

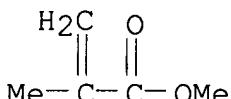
AB **Rhodamine-B**-doped and Au(III)-doped **PMMA**
medium for three-dimensional multi-layered optical memory were
studied. Using the quenching of **rhodamine-B** by
Au(III)-ions and the photochem. redn. of Au(III)-ions to the Au
particle, the developed **medium** can **record** and
store binary bit data in the form of a fluorescent patterns inside a
thick medium. The recorded fluorescent pattern is read out
three-dimensionally by confocal laser-scanning fluorescent pickup.

IT 80-62-6, Methyl methacrylate 9011-14-7,
Polymethyl methacrylate

(**Rhodamine-B** and gold-doped **PMMA**
film for three-dimensional multi-layered optical memory)

RN 80-62-6 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



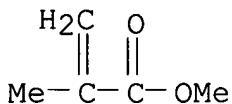
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2

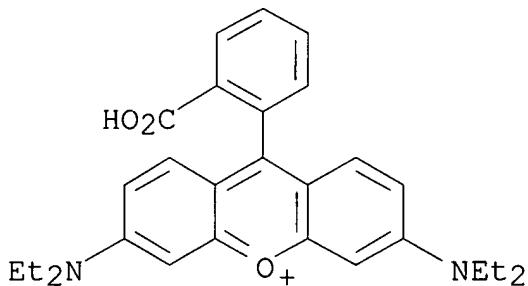


IT 81-88-9, Rhodamine-B

(Rhodamine-B; Rhodamine-B
and gold-doped **PMMA** film for
three-dimensional multi-layered optical memory)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)

● Cl⁻

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

ST gold Rhodamine doped **polymethylmethacrylate** film
optical recording three dimensional

IT Fluorescence quenching

Optical recording materials

Reduction, photochemical

(Rhodamine-B and gold-doped **PMMA**

film for three-dimensional multi-layered optical memory)

IT 7440-57-5, Gold, processes

(Rhodamine-B and gold-doped **PMMA**

film for three-dimensional multi-layered optical memory)

IT 16065-91-1, Gold ion(3+), properties

(Rhodamine-B and gold-doped **PMMA**

film for three-dimensional multi-layered optical memory)

IT 16903-35-8, Tetrachloroauric acid

(Rhodamine-B and gold-doped **PMMA**

film for three-dimensional multi-layered optical memory)

IT 80-62-6, Methyl methacrylate **9011-14-7**,

Polymethyl methacrylate

(Rhodamine-B and gold-doped PMMA

film for three-dimensional multi-layered optical memory)

IT 81-88-9, Rhodamine-B

(Rhodamine-B; Rhodamine-B

and gold-doped PMMA film for

three-dimensional multi-layered optical memory)

L49 ANSWER 5 OF 6 HCA COPYRIGHT 2005 ACS on STN

127:115178 Materials and systems for two photon 3-D ROM devices.

Dvornikov, Alexander S.; Cokgor, Ilkan; Wang, Mark; McCormick, Frederick B., Jr.; Esener, Sadik C.; Rentzeplis, Peter M.

* (Call/Recall Inc., San Diego, CA, 92121, USA). IEEE Transactions on Components, Packaging, and Manufacturing Technology, Part A, 20(2), 203-212 (English) 1997. CODEN: IMTAEZ. ISSN: 1070-9886.

Publisher: Institute of Electrical and Electronics Engineers.

AB The methods and systems used for storing and accessing information in three dimensions by means of two-photon absorption are described. The materials into which the information is stored are org. mols. dispersed in polymer matrixes, which change structure and spectra after absorption of light. The writing and accessing of the information can be performed either bit-by-bit or in a two-dimensional (2-D) multi-bit plane format. Automated recording and readout three-dimensional (3-D) systems have been constructed and characterized. Channel error sources have been identified, and a custom spatial bit-error-rate test has been developed.

IT 9011-14-7, PMMA

(3D ROM devices using nitro-naphthaldehyde as acid generator and Rhodamine B base as dye precursor in solid PMMA matrix)

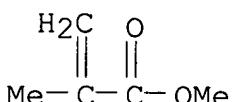
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

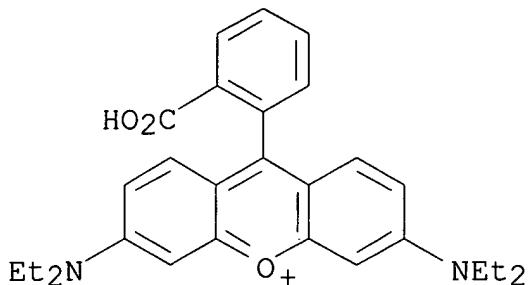
CMF C5 H8 O2



IT 81-88-9, Rhodamine B

(3D ROM devices using nitro-naphthaldehyde as acid generator and Rhodamine B base as dye precursor in solid PMMA matrix)

RN 81-88-9 HCA
 CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
 (9CI) (CA INDEX NAME)



● Cl⁻

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST optical memory device nitronaphthaldehyde Rhodamine **PMMA**;
 photochromic Rhodamine dye 3D ROM device
 IT Fluorescence
 Optical memory devices
 Optical recording
 Photochromic materials
 (3D ROM devices using nitro-naphthaldehyde as acid generator and
 Rhodamine B base as dye precursor in solid
 PMMA matrix)
 IT Memory devices
 (ROM (read only); 3D ROM devices using nitro-naphthaldehyde as
 acid generator and **Rhodamine B** base as dye
 precursor in solid **PMMA** matrix)
 IT **9011-14-7, PMMA**
 (3D ROM devices using nitro-naphthaldehyde as acid generator and
 Rhodamine B base as dye precursor in solid
 PMMA matrix)
 IT 509-34-2, **Rhodamine B** base 101327-84-8,
 1-Nitro-2-naphthaldehyde
 (3D ROM devices using nitro-naphthaldehyde as acid generator and
 Rhodamine B base as dye precursor in solid
 PMMA matrix)
 IT **81-88-9, Rhodamine B**
 (3D ROM devices using nitro-naphthaldehyde as acid generator and
 Rhodamine B base as dye precursor in solid
 PMMA matrix)

L49 ANSWER 6 OF 6 HCA COPYRIGHT 2005 ACS on STN

126:285222 Novel organic ROM materials for optical 3D memory devices.

Dvornikov, A. S.; Rentzepis, P. M. (Dep. Chem., Univ. California, Irvine, CA, 92697, USA). Optics Communications, 136(1,2), 1-6 (English) 1997. CODEN: OPCOB8. ISSN: 0030-4018. Publisher: Elsevier.

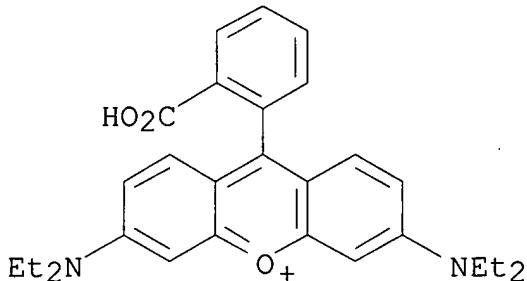
AB We describe novel optical memory materials which we developed for Read Only Memory (ROM) computer storage applications. Their optical and spectroscopic properties are briefly described and the utilization of these ROM materials in 3D optical storage devices, by means of two-photon absorption, is demonstrated.

IT **81-88-9, Rhodamine B**

(novel org. ROM materials for optical 3D memory devices)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IT **9011-14-7, PMMA**

(novel org. ROM materials for optical 3D memory devices)

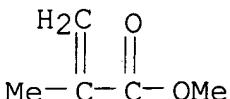
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 41

IT **Optical memory devices**
 Optical recording
 (novel org. ROM materials for optical 3D memory devices)

IT **81-88-9, Rhodamine B** 509-34-2,
Rhodamine B base
 (novel org. ROM materials for optical 3D memory devices)

IT 75-05-8, Acetonitrile, uses 107-06-2, 1,2-Dichloroethane, uses 110-82-7, Cyclohexane, uses 141-78-6, Ethyl acetate, uses **9011-14-7, PMMA**
 (novel org. ROM materials for optical 3D memory devices)

=> d his 153-

FILE 'HCA' ENTERED AT 17:01:31 ON 24 JUN 2005
 L53 13053 S SPINCOAT? OR (SPIN? OR SPUN?) (2A) COAT?
 L54 1 S L52 AND L53
 L55 47 S L52 NOT L54

=> d 154 1 cbib abs hitstr hitind

L54 ANSWER 1 OF 1 HCA COPYRIGHT 2005 ACS on STN
 109:83632 **Optical recording medium** with
 fluorescent material-containing microcapsules. Igarashi, Sachiko; Hiraoka, Mitsuo; Imataki, Hiroyuki; Ogawa, Yoshihiro; Yoshino, Hitoshi; Kato, Seijiro (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 62280082 A2 **19871204** Showa, 5 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-123280 19860530.

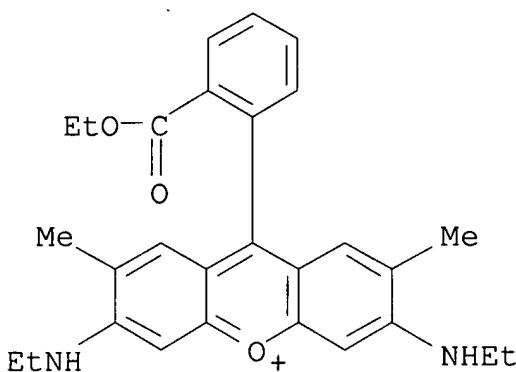
AB An **optical recording medium** has a **recording** layer which contains pressure-sensitive microcapsules composed of a fluorescent material as an inclusion a wall material which optically conceals the fluorescent material. The **medium** has high **recording** sensitivity toward a low-powered laser beam without needing phys. changes, like pit formation, and is useful for recording on cash cards, credit cards, and the like. Thus, a PhCl soln. contg. fluorescein and terephthaloyl chloride was emulsified with NaHCO3 and stirred after addn. of diethylene glycol to yield microcapsules, which were isolated by centrifuging. A polycarbonate substrate was **spin-coated** with a 5 .mu.m-layer of a nitrocellulose and C black mixt. The substrate was then coated with a 1 .mu.m-layer of the microcapsules and finally covered with a 0.05 mm polycarbonate film as a protective layer to construct an **optical recording** material. The material was

irradiated with a 816 nm semiconductor laser pulse (3 mW. 0.1 ms) to **record information** to give a reflectance change between exposed (32%) and unexposed (3.5%) area, to show good recording sensitivity.

IT **989-38-8**, Rhodamine 6GCP **2321-07-5**, Fluorescein (fluorescent material, laser **optical recording** material using microcapsules contg.)

RN 989-38-8 HCA

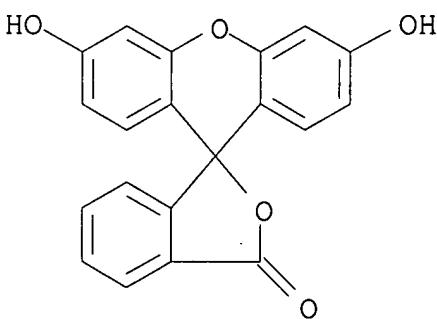
CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



IC ICM B41M005-26

ICS B42D015-02; G06K019-00; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST microcapsule fluorescent dye recording material; semiconductor laser

IT **optical recording**; fluorescein microcapsule
IT **optical recording** material
IT Dyes
 (fluorescent, laser **optical recording**
 material using microcapsules contg.)
IT **Recording** materials
 (**optical**, laser-sensitive, with **layer** contg.
 pressure-sensitive microcapsules contg. fluorescent material, for
 cash cards)
IT **989-38-8**, Rhodamine 6GCP **2321-07-5**, Fluorescein
 (fluorescent material, laser **optical recording**
 material using microcapsules contg.)
IT 1344-09-8, Sodium silicate 25549-84-2, Poly(sodium acrylate)
 26913-36-0 115864-51-2
 (laser **optical recording** material using
 fluorescent agent-contg. microcapsules from)

=> d 155 1-47 ti

L55 ANSWER 1 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Reference standard materials for cytology, histology and
 immunohistochemistry comprising a diagnostically relevant target

L55 ANSWER 2 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Rhodamine compounds with excellent light and heat resistance, films,
 optical filters, and color-converting layers containing them, and
 color-converting filters and light-emitting devices using them

L55 ANSWER 3 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Method to authenticate articles and security documents

L55 ANSWER 4 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Laser etching of polymer films doped with **rhodamine B**

L55 ANSWER 5 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Methods for detection and quantitation of nucleic acids for
 diagnosis of genetic diseases and infections and forensic, food and
 environmental screening

L55 ANSWER 6 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Detection and/or quantification method of a target molecule by a
 binding with a capture molecule fixed on the surface of a disc

L55 ANSWER 7 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Simple method and media for irreversible thermochromic recording of
 temperature

L55 ANSWER 8 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI High resolution beyond aperture size achieved by hybrid SNOM/STM system

L55 ANSWER 9 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Photopolymerizable image recording materials with excellent light stability for presensitized lithographic printing plates

L55 ANSWER 10 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Resonant degenerate four-wave mixing in **PMMA** films doped with rhodamine 6G and **rhodamine B**: influence of aggregate formation

L55 ANSWER 11 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Silicate-based material suitable for holographic **medium** and **optical** articles and its manufacture

L55 ANSWER 12 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Method for determining mRNA tissue distribution using restriction endonuclease digestion and PCR amplification for database indexing and drug screening

L55 ANSWER 13 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Exploratory approaches to the study of acid diffusion and acid loss from polymer films using absorption and fluorescence spectroscopy

L55 ANSWER 14 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Low-temperature synthesis of anatase thin films on glass and organic substrates by direct deposition from aqueous solutions

L55 ANSWER 15 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Magnetic **recording medium** and its manufacture

L55 ANSWER 16 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Generation of Micrometer-Sized Patterns for Microanalytical Applications Using a Laser Direct-Write Method and Microcontact Printing

L55 ANSWER 17 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Time-resolved microspectroscopy and interferometry of organic mesoscopic materials

L55 ANSWER 18 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Composite magnetooptical **information recording medium**

L55 ANSWER 19 OF 47 HCA COPYRIGHT 2005 ACS on STN

TI Measurements of dispersion properties of refractive indices and absorption coefficients in organic-dye-doped thin films by a prism-coupling method

L55 ANSWER 20 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Antistatic polyester films and their manufactures

L55 ANSWER 21 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Study of the emission spectra of **poly(methyl methacrylate)** films doped with luminescent materials

L55 ANSWER 22 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI High-sensitivity optical cord with chalcogenide glass and dye layers

L55 ANSWER 23 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Optical bistability in dye molecules

L55 ANSWER 24 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Radiolysis of triphenylmethane, anthraquinone, xanthene, oxazine, triazine and azo dyes in polymer films

L55 ANSWER 25 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Optical bistability in fluorescein dyes

L55 ANSWER 26 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Optical bistability in dimer-monomer dye systems

L55 ANSWER 27 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Refractive-index patterns in doped **PMMA** films, recorded with a helium-neon laser

L55 ANSWER 28 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Preparation of two-dimensional optical patterns

L55 ANSWER 29 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI **Optical recording** materials

L55 ANSWER 30 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Light-heat transforming type thermal transfer **recording medium**

L55 ANSWER 31 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Photopolymerizable laminate

L55 ANSWER 32 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Laser multilayer recording materials

L55 ANSWER 33 OF 47 HCA COPYRIGHT 2005 ACS on STN

TI Laser recording materials

L55 ANSWER 34 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Flat-faced luminescent materials

L55 ANSWER 35 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Luminescent materials

L55 ANSWER 36 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Luminescent materials

L55 ANSWER 37 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI The application of thin-film wavelength-shifting coatings of Perspex
to solar energy collection

L55 ANSWER 38 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Laser recording materials

L55 ANSWER 39 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Luminescent solar concentrators as bifacial captors

L55 ANSWER 40 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Use of an electrostatic electron accelerator for studying
radiochemical processes in polymer compositions used in dosimetry

L55 ANSWER 41 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Image recording materials and processes

L55 ANSWER 42 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Layer for down-conversion of light

L55 ANSWER 43 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Laser recording materials

L55 ANSWER 44 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Aminoplast dispersions and polyurethanes prepared therefrom

L55 ANSWER 45 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Visualization of integrated optical microcircuits by fluorescence

L55 ANSWER 46 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Observation of the propagation in an optical waveguide by
anti-Stokes fluorescence

L55 ANSWER 47 OF 47 HCA COPYRIGHT 2005 ACS on STN
TI Photocolorable, vacuum-sublimed, xanthene dyes

=> d 155 11,15,18,28,29,30,32,33,38,41,43 cbib abs hitstr hitind

L55 ANSWER 11 OF 47 HCA COPYRIGHT 2005 ACS on STN

134:104688 Silicate-based material suitable for holographic
medium and **optical** articles and its manufacture.

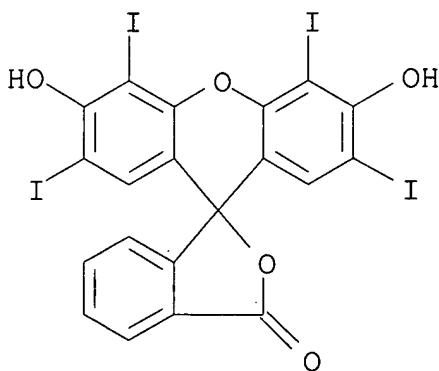
Katz, Howard Edan (Lucent Technologies Inc., USA). Eur. Pat. Appl. EP 1069081 A2 **20010117**, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-305568 20000703. PRIORITY: US 1999-353898 19990715.

AB A silicate material, comprising a silicate domain and .gtoreq.1 substantially nonsilicate domains is described. The material is produced by mixing a templating mixt. with a pre-cured resin and .gtoreq.1 resin precursors. The templating mixt. comprises .gtoreq.1 surfactants, .gtoreq.1 alcs. and water. A pre-cured resin is formed by reacting .gtoreq.1 silicate resin precursors with water, and preferably in the presence of a co-solvent and a catalyst. The invention also includes a method for fabricating the silicate material, a holog. **medium**, an **optical** article, and a method for fabricating an optical article.

IT **16423-68-0**, Erythrosine **17372-87-1**, Eosin
 (photoinitiator; manuf. of silicate-based material for holog.
medium and **optical** articles)

RN 16423-68-0 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
 3',6'-dihydroxy-2',4',5',7'-tetraiodo-, disodium salt (9CI) (CA
 INDEX NAME)

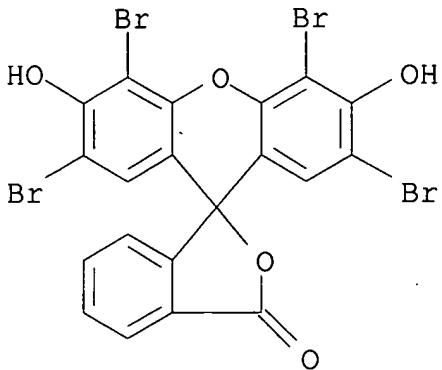


●2 Na

RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
 2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA

INDEX NAME)



●2 Na

IC ICM C03B008-02
 ICS C03C014-00; C01B037-00
 CC 57-1 (Ceramics)
 Section cross-reference(s): 38, 73
 IT Heat treatment
 (120-130.degree.; manuf. of silicate-based material for holog.
 medium and **optical** articles)
 IT Hydrocarbons, uses
 (alicyclic, fluid exchange with; manuf. of silicate-based
 material for holog. **medium** and **optical**
 articles)
 IT Silanes
 (alkoxy, silicate precursor; manuf. of silicate-based material
 for holog. **medium** and **optical** articles)
 IT Silanes
 (alkylalkoxy, silicate precursor; manuf. of silicate-based
 material for holog. **medium** and **optical**
 articles)
 IT Gases
 (controlled atm.; manuf. of silicate-based material for holog.
 medium and **optical** articles)
 IT Solvents
 (cosolvents; manuf. of silicate-based material for holog.
 medium and **optical** articles)
 IT Aromatic hydrocarbons, uses
 Esters, uses
 Ethers, uses
 (fluid exchange with; manuf. of silicate-based material for
 holog. **medium** and **optical** articles)

- IT Hydrocarbons, uses
 - (halo; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Molding
 - (injection; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Pore
 - (interconnected; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Annealing
- Catalysts
 - Coating** process
 - Dielectric constant
 - Electric conductors
 - Electric insulators
 - Extrusion, nonbiological
 - Holography
 - Light scattering
 - Molding
 - Molds (forms)
 - Optical filters
 - Optical waveguides
 - Printing (impact)
 - Refractive index
 - Semiconductor materials
 - Surfactants
 - (manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Silicates, preparation
 - (manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Alcohols, processes
 - (manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Glass, processes
 - (manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Crosslinking
 - (photochem.; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Photoimaging materials
 - (photopolymerizable; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Resins
 - (pre-cured and precursors; manuf. of silicate-based material for holog. **medium** and **optical** articles)
- IT Porous materials
 - (silicate-based material; manuf. of silicate-based material for

holog. **medium** and **optical** articles)

IT Materials processing
(templates, mixt.; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 67-63-0, Isopropanol, uses 75-05-8, Acetonitrile, uses
(curing with; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 76-05-1, uses 7647-01-0, Hydrochloric acid, uses 7697-37-2,
Nitric acid, uses 10026-04-7, Silicon chloride (SiCl4)
10035-10-6, Hydrogen bromide, uses 10294-34-5, Boron chloride
(BCl3)
(manuf. of silicate-based material for holog. **medium**
and **optical** articles)

IT 67-56-1, Methanol, uses 125051-32-3, CGI-784
(manuf. of silicate-based material for holog. **medium**
and **optical** articles).

IT 25917-35-5, Hexanol
(manuf. of silicate-based material for holog. **medium**
and **optical** articles)

IT 57-09-0, Cetyltrimethylammonium bromide 681-84-5, Tetramethoxy
silane 7732-18-5, Water, processes
(manuf. of silicate-based material for holog. **medium**
and **optical** articles)

IT 108-88-3, Toluene, uses 48145-04-6, Phenoxy ethyl acrylate
(nonpolar solvent; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 61-73-4, Methylene blue 105-59-9, n-Methyl diethanol amine
11121-48-5, Rose bengal **16423-68-0**, Erythrosine
17372-87-1, Eosin
(photoinitiator; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 78-10-4, Tetraethoxysilane 998-30-1, Triethoxysilane 1185-55-3,
Methyltrimethoxysilane
(silicate precursor; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 60354-74-7P
(silicate precursor; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 108-93-0, Cyclohexanol, uses 818-61-1
(solvent exchange with; manuf. of silicate-based material for
holog. **medium** and **optical** articles)

IT 111-87-5, Octanol, uses 9002-92-0, Brij30
(surfactant mixt.; manuf. of silicate-based material for holog.
medium and **optical** articles)

IT 112-60-7D, Tetra ethylene glycol, Mono dodecyl ether 123-03-5,
Cetylpyridinium chloride
(surfactant; manuf. of silicate-based material for holog.
medium and **optical** articles)

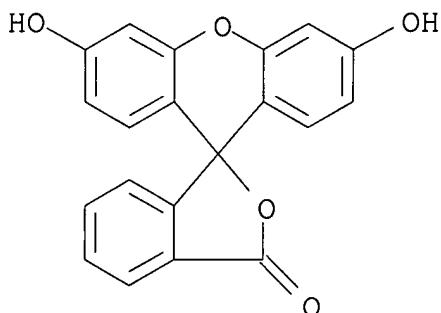
L55 ANSWER 15 OF 47 HCA COPYRIGHT 2005 ACS on STN
 130:46491 Magnetic **recording medium** and its
 manufacture. Sato, Kenichi; Ito, Kumeta (Sony Corp., Japan). Jpn.
 Kokai Tokkyo Koho JP 10320739 A2 **19981204** Heisei, 9 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-127493 19970516.

AB The **recording medium** is coated with a lubricant
 contg. an additive, which shows fluorescence or an absorption
 spectrum by irradn. of light, at the main side on the surface. The
 method involves spectroscopic anal. of the additive in the lubricant
 during its application process to give its thickness to be coated
 based on the amt. of the additive. The thickness of the lubricant
 layer is precisely controlled by the method to give magnetic
recording media with good durability in repeated
 use.

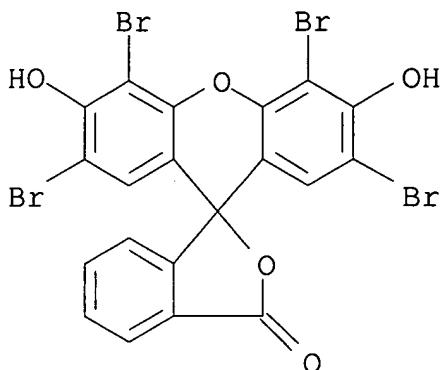
IT **2321-07-5**, Fluorescein **17372-87-1**, Eosin
 (manuf. of magnetic tape **coated** with lubricant contg.
 fluorescent additive for thickness detection)

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
 (9CI) (CA INDEX NAME)



RN 17372-87-1 HCA
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
 2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA
 INDEX NAME)



● 2 Na

IC ICM G11B005-66
ICS C10M129-76; C10M171-00; G11B005-72; G11B005-84; C10N030-20;
C10N040-18; C10N050-10
CC 77-8 (Magnetic Phenomena)
ST magnetic **recording tape** lubricant fluorescent
additive; spectroscopy detection lubricant thickness magnetic tape;
fluorescein eosin additive lubricant magnetic tape
IT Polyethers, processes
Polyethers, processes
(fluorine-contg.; manuf. of magnetic tape **coated** with
lubricant contg. fluorescent additive for thickness detection)
IT Lubricants
Magnetic tapes
(manuf. of magnetic tape **coated** with lubricant contg.
fluorescent additive for thickness detection)
IT Fluoropolymers, processes
Fluoropolymers, processes
(polyether-; manuf. of magnetic tape **coated** with
lubricant contg. fluorescent additive for thickness detection)
IT 2321-07-5, Fluorescein 17372-87-1, Eosin
(manuf. of magnetic tape **coated** with lubricant contg.
fluorescent additive for thickness detection)

L55 ANSWER 18 OF 47 HCA COPYRIGHT 2005 ACS on STN

128:108524 Composite magneto-optical information

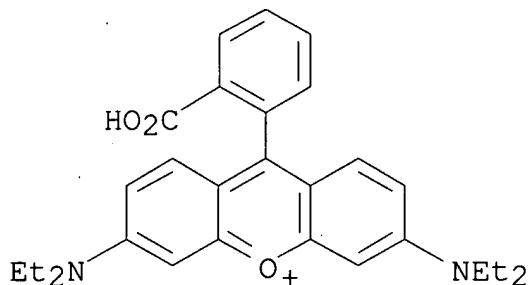
recording medium. Kitaguchi, Tooru; Yoneda, Mikio
(Daicel Chemical Industries, Ltd., Japan). U.S. US 5700565 A
19971223, 8 pp., Cont. of U.S. Ser. No. 371,459, abandoned.
(English). CODEN: USXXAM. APPLICATION: US 1995-532006 19950921.
PRIORITY: JP 1989-224900 19890831; US 1990-576025 19900831; US

AB 1993-118091 19930908; US 1995-371459 19950111.
 A composite magneto-optical **information recording** medium comprises a substrate and a composite recording layer comprising a magneto-optical layer, a metallic layer, and an electron transition layer which exhibits transition of electrons in a wavelength range of a laser beam used for recording and/or regenerating information, the three layer being layered successively in this order so that the laser beam impinges on the magneto-optical layer.

IT **81-88-9, Rhodamine B**
 (composite magneto-optical recording materials contg. electron transition **layers** of)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC ICM G11B005-66
 INCL 428332000
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT Magneto-optical recording materials
 (composite; contg. electron transition **layers** and metal **layers**)
 IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses
 (composite magneto-optical recording materials contg. electron transition **layers** and **layers** of)
 IT 201208-85-7
 (composite magneto-optical recording materials contg. electron

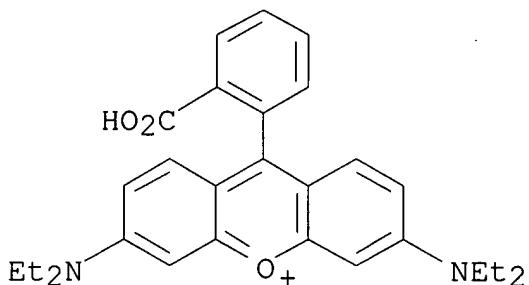
transition **layers** and recording **layers** of)
 IT **81-88-9, Rhodamine B**
 (composite magneto-optical recording materials contg. electron
 transition **layers** of)

L55 ANSWER 28 OF 47 HCA COPYRIGHT 2005 ACS on STN
 105:88744 Preparation of two-dimensional optical patterns. Morinaka,
 Akira; Oikawa, Shigeru (Nippon Telegraph and Telephone Public Corp.,
 Japan). Jpn. Kokai Tokkyo Koho JP 61029592 A2 **19860210**
 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1984-151813 19840720.

AB Two-dimensional optical patterns are formed by laser beam irradn. of
 vacuum-deposited org. dye layers. The method is esp. useful for
 forming tracking layers of laser **recording disks**
 and for prepn. of Fresnel lenses.

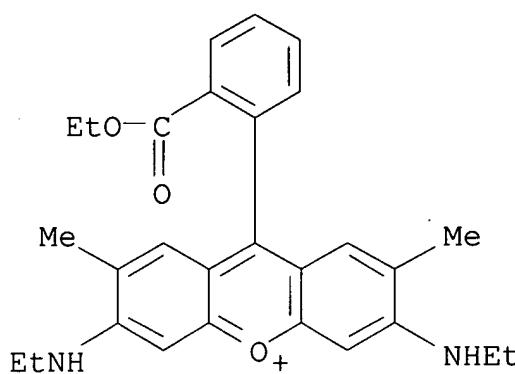
IT **81-88-9 989-38-8 2321-07-5**
 (laser patterning of **layer** of, for **optical**
recording tracking **layer**)

RN 81-88-9 HCA
 CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
 (9CI) (CA INDEX NAME)



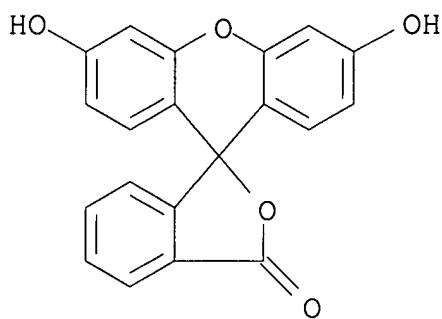
● Cl⁻

RN 989-38-8 HCA
 CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-
 dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 2321-07-5 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
 (9CI) (CA INDEX NAME)



IC ICM B41M005-26
 ICS C23C014-04; G11B007-00
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 73
 ST laser patterning vacuum deposited dye; **optical**
recording disk tracking pattern; Fresnel lens
 laser fabrication
 IT Lenses
 (Fresnel, prepн. of, by laser patterning of vacuum-deposited dye
layers)
 IT **Recording** materials
 (**optical**, tracking **layers** of,
 vacuum-deposited dye **layers** as)
 IT 61-73-4 81-88-9 119-15-3 147-14-8 596-01-0

603-45-2 **989-38-8** 1562-85-2 **2321-07-5**
 2379-90-0 2381-85-3 3179-89-3 6373-69-9 61931-40-6
 (laser patterning of **layer** of, for **optical**
recording tracking **layer**)

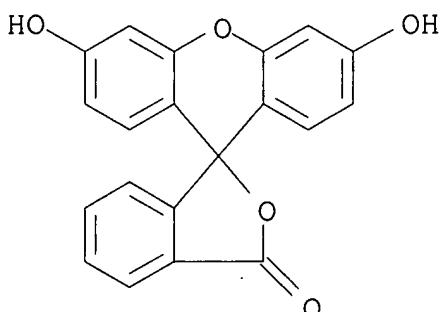
L55 ANSWER 29 OF 47 HCA COPYRIGHT 2005 ACS on STN
 104:159715 **Optical recording** materials. Morinaka,
 Akira; Oikawa, Shigeru (Nippon Telegraph and Telephone Public Corp.,
 Japan). Jpn. Kokai Tokkyo Koho JP 60219647 A2 **19851102**
 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1984-74374 19840413.

AB The claimed **optical recording** materials have
 .gtoreq.2 sets of **optical recording**
 layer-tracking layer combinations. The tracking layer may have
 tracking groove and contain an org. dye which is transparent with
 respect to the recording and readout lights and absorbs light
 transmitting through the recording layer. Optionally the tracks are
 regions with different n values formed in a layer which shows
 photochromium or light-induced n change.

IT **2321-07-5**
 (laser **recording disk** tracking **layer**
 of)

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
 (9CI) (CA INDEX NAME)



IC ICM G11B007-24
 ICS B41M005-26; G03C001-72
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST laser **recording disk** multilayer
 IT Glass, nonoxide
 (laser **recording disk** tracking **layer**
 of)
 IT **Recording** materials
 (**optical**, laser-sensitive, **recording** and
 tracking **layers** of multilayer)

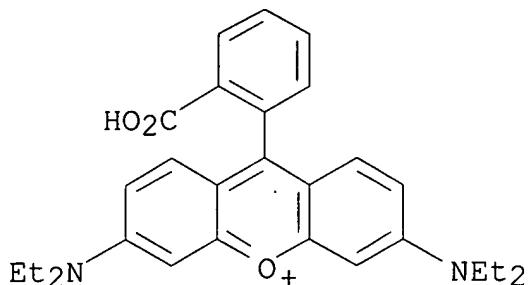
IT 603-45-2 **2321-07-5**
(laser **recording disk** tracking **layer**
of)
IT 129-73-7 1552-42-7 25722-33-2
(multilayer laser **recording disk** interlayer
contg.)

L55 ANSWER 30 OF 47 HCA COPYRIGHT 2005 ACS on STN
103:113403 Light-heat transforming type thermal transfer
recording medium. (Tomoegawa Paper Mfg. Co., Ltd.,
Japan; Matsushita Electric Industrial Co., Ltd.). Jpn. Kokai Tokkyo
Koho JP 60068993 A2 **19850419** Showa, 5 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1983-177031 19830927.

AB Title medium composes of (1) a discharge destruction recording sheet
having a light reflecting layer which may be partially eliminated by
discharge and is formed on a transparent sheet support and (2) a
heat transfer recording sheet with a thermal transferable compn.
coated on or immersed into a support having a light-heat
transforming function, and they are used with their supports under
close-contact condition. The assembly provides transferred image
having durability and clarity when using a light source and is
suitable to obtain transferred color images. Thus, (1) a polyester
film of thickness 25 .mu. was coated with a dispersion contg.
urethane resin (Crisvon 7209), silica fine powder, and a
crosslinking agent (Crisvon NX) in EtOAc to form a transparent layer
having a roughened surface, and vacuum evapd. with Al to give a
discharge destruction recording sheet, and (2) another polyester
film of thickness 50 .mu. was coated with a dispersion contg. satd.
copolymer polyester resin (ER-3200) and carbon black in EtCOMe to
form a light-heat transforming layer, and overcoated with another
dispersion contg. phthalocyanine blue and oligostyrene (PSMS-11) in
toluene to form a heat transferring layer and give a heat transfer
recording sheet. Patternwise discharging the discharge destruction
recording sheet to record, close-contacting the recorded sheet with
the heat transfer recording sheet, which was also close-contacted
with a plain paper, and Xe light exposing the recorded sheet gave a
clear blue image on the paper.

IT **81-88-9D**, chelate compds.
(in elec. discharge destruction type thermal transfer recording
multilayer assembly)

RN 81-88-9 HCA
CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

IC ICM B41M005-26
ICS B41M005-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST elec discharge **optical** thermal **recording**

IT Recording materials
(thermal-transfer, light-heat transformation type, with elec. discharge destruction **layer**)

IT **81-88-9D**, chelate compds. 147-14-8 6358-85-6
7631-86-9, uses and miscellaneous 82600-65-5 84014-00-6
97955-80-1 97956-10-0
(in elec. discharge destruction type thermal transfer recording multilayer assembly)

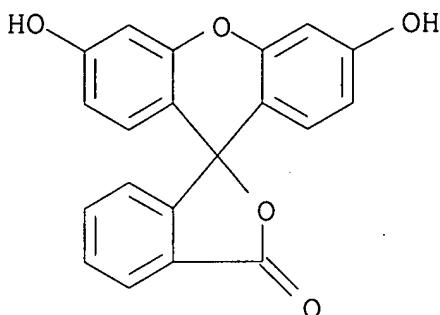
L55 ANSWER 32 OF 47 HCA COPYRIGHT 2005 ACS on STN
102:141001 Laser multilayer recording materials. (Nippon Telegraph and Telephone Public Corp., Japan). Jpn. Kokai Tokkyo Koho JP 59210543
A2 **19841129** Showa, 8 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1983-84249 19830516.

AB A multilayer laser recording material with improved sensitivity and stability is obtained by forming on a substrate a multiset laminate wherein each set is a sandwiched structure comprised of a light absorbing middle layer which is the same for all sets and 2 transparent outer layers. The above sandwiched multiset laminate may contain >2 different light absorbing middle layers.

IT **2321-07-5**
(laser multiset sandwiched **laminated** recording materials contg.)

RN 2321-07-5 HCA

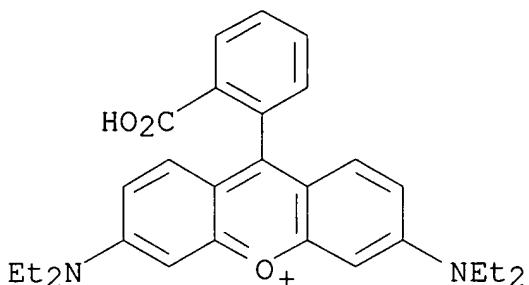
CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



IT 81-88-9 989-38-8

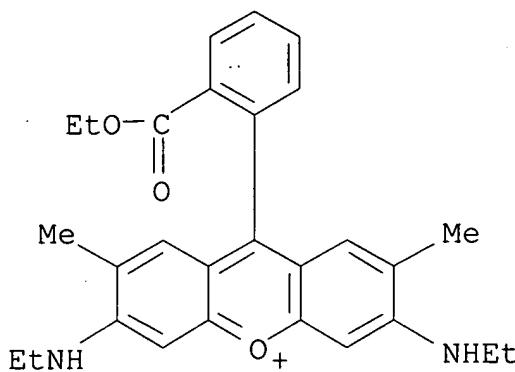
(laser multiset sandwiched **laminated** recording
materials with light-absorbing **layer** of)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)● Cl⁻

RN 989-38-8 HCA

CN Xanthylum, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-
dimethyl-, chloride (9CI) (CA INDEX NAME)

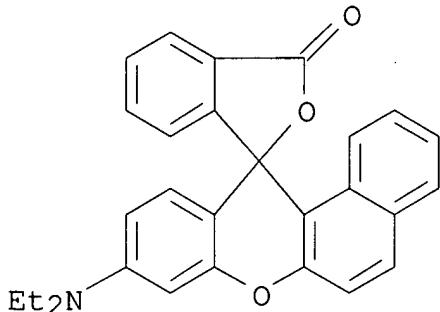


IT 26628-47-7

(laser multiset sandwiched **laminated** recording materials with transparent **layer** of)

RN 26628-47-7 HCA

CN Spiro[12H-benzo[a]xanthene-12,1' (3'H)-isobenzofuran]-3'-one, 9-(diethylamino)- (9CI) (CA INDEX NAME)



IC G11B007-24; B41M005-26; G11C013-04

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Glass, nonoxide

(chalcogenide, laser multiset sandwiched **laminated** recording materials with light-absorbing **layer** of)

IT Amides, uses and miscellaneous

(aliph., laser multiset sandwiched **laminated** recording materials with transparent **layer** of)

IT **Recording** materials

(optical, multiset sandwiched **laminated** for,

IT contg. light-absorbing middle **layer**)
 7440-21-3, uses and miscellaneous
 (amorphous hydrogenated, laser multiset sandwiched
laminated recording materials with light-absorbing
layer of)

IT **2321-07-5**
 (laser multiset sandwiched **laminated** recording
 materials contg.)

IT **81-88-9 989-38-8** 1562-85-2 14233-37-5
 15730-54-8 72079-62-0 95665-09-1
 (laser multiset sandwiched **laminated** recording
 materials with light-absorbing **layer** of)

IT 7440-22-4, uses and miscellaneous 7440-57-5, uses and
 miscellaneous 7440-69-9, uses and miscellaneous 13494-80-9, uses
 and miscellaneous 13930-88-6 53199-37-4 89962-82-3
 95570-07-3
 (laser multiset sandwiched **laminated** recording
 materials with light-adsorbing **layer** of)

IT 77-09-8 80-05-7, uses and miscellaneous 124-26-5 125-20-2
 1314-35-8, uses and miscellaneous 1552-42-7 5339-80-0
 7446-07-3 7631-86-9, uses and miscellaneous **26628-47-7**
 87715-08-0
 (laser multiset sandwiched **laminated** recording
 materials with transparent **layer** of)

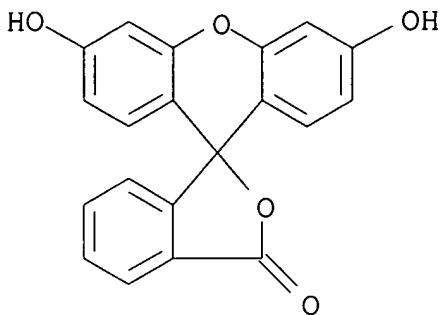
L55 ANSWER 33 OF 47 HCA COPYRIGHT 2005 ACS on STN
 102:36900 Laser recording materials. (Nippon Telegraph and Telephone
 Public Corp., Japan). Jpn. Kokai Tokkyo Koho JP 59171046 A2
19840927 Showa, 3 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1983-44321 19830318.

AB A laser recording material with an improved signal-to-noise ratio is obtained by laminating successively on a transparent substrate a dye layer (e.g., fluorescein) which absorbs visible light and changes shape and a reflection layer for **recording** **information** (e.g., a Te layer). A laser beam in the visible wavelength (e.g., an Ar laser beam of 5145 .ANG.) is used to form a tracking groove on the dye layer and a semiconductor laser beam of the wavelength 8300 .ANG. may be used in **recording** **information** on the above Te layer.

IT **2321-07-5**
 (laser recording materials with visible light absorbing
layer of, for formation of tracking grooves)

RN 2321-07-5 HCA
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
 (9CI) (CA INDEX NAME)



23

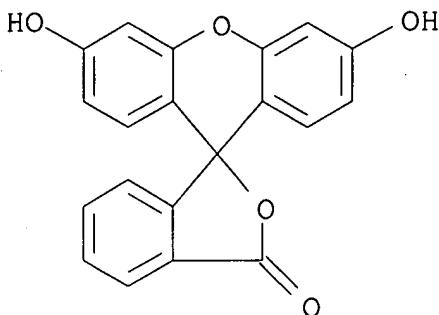
IC G11B007-24; B41M005-26
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT Dyes
 (laser recording materials with visible light absorbing **layer** of, for formation of tracking grooves)
 IT Recording materials
 (optical, with visible light absorbing dye
 layer contg. tracking grooves and tellurium recording **layer**)
 IT 13494-80-9, uses and miscellaneous
 (laser recording materials with recording **layer** of)
 IT **2321-07-5**
 (laser recording materials with visible light absorbing **layer** of, for formation of tracking grooves)

L55 ANSWER 38 OF 47 HCA COPYRIGHT 2005 ACS on STN
 99:149627 Laser recording materials. (Nippon Telegraph and Telephone Public Corp., Japan). Jpn. Kokai Tokkyo Koho JP 57117139 A2
19820721 Showa, 4 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1981-1626 19810110.

AB A laser recording material is composed of a transparent support, a transparent thermal insulator layer made of a sublimable substance, and a laser absorber layer. Preferably, plasma polymd. film or vacuum deposited org. dye is used as the thermal insulating layer. Thus, a glass substrate was coated with CS₂ polymer layer (by plasma polymn. method), and Te was vacuum deposited to give a laser recording material which showed excellent sensitivity towards semiconductor lasers.

IT **2321-07-5**
 (laser recording materials contg.)

RN 2321-07-5 HCA
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



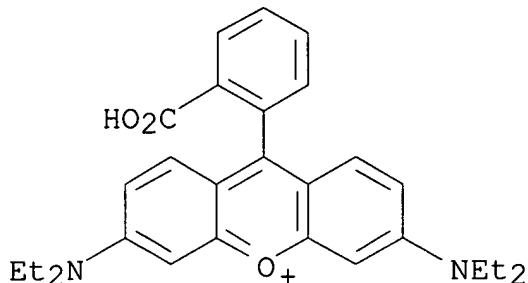
IC G11B007-24
 ICA B41M005-00; G11C013-02
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST laser recording carbon disulfide polymer; tellurium laser
recording disk
 IT **Recording** materials
 (optical, laser-sensitive **laminates** for)
 IT **2321-07-5** 7440-69-9, uses and miscellaneous 13494-80-9,
 uses and miscellaneous 25948-29-2
 (laser recording materials contg.)

L55 ANSWER 41 OF 47 HCA COPYRIGHT 2005 ACS on STN
 95:178617 Image recording materials and processes. (Matsushita Electric
 Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 56028891
19810323 Showa, 4 pp. (Japanese). CODEN: JKXXAF.

AB APPLICATION: JP 1979-104575 19790816.
 Heat- or light-sensitive image recording materials are prep'd. by
 using active substance in its semireduced state, which is obtained
 by reaction of a redox dye in colored state (i.e. in oxidized state)
 with a leuco dye (i.e. in reduced state). Thus, a mixt. of
 lencomethylene blue 100 and methylene blue 30 mg was vacuum
 deposited on a paper to give an imaging sheet having light blue
 color. Dark blue images were formed when the imaging sheet was
 exposed to Xe flash at 430 mJ/cm².

IT **81-88-9**
 (photoimaging and thermal recording materials contg. reaction
 products of leuco dye with)

RN 81-88-9 HCA
 CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
 (9CI) (CA INDEX NAME)



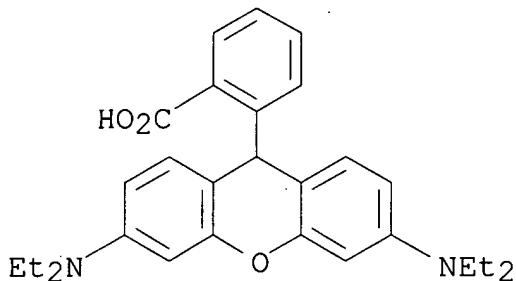
● Cl⁻

IT 4344-42-7

(photoimaging and thermal recording materials contg. reaction products of oxidized dye with)

RN 4344-42-7 HCA

CN Benzoic acid, 2-[3,6-bis(diethylamino)-9H-xanthen-9-yl]- (9CI) (CA INDEX NAME)



IC B41M005-18; G03C001-72

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT Thermography

(heat-sensitive **sheets** for, contg. dye-leuco dye reaction products)

IT Recording

(optical, laser, heat-sensitive **sheets** for, contg. dye-leuco dye reaction products)

IT Recording

(thermal, heat-sensitive **sheets** for, contg. dye-leuco dye reaction products)

IT 61-73-4 81-88-9 548-62-9 569-64-2 2516-05-4

25641-18-3

(photoimaging and thermal recording materials contg. reaction

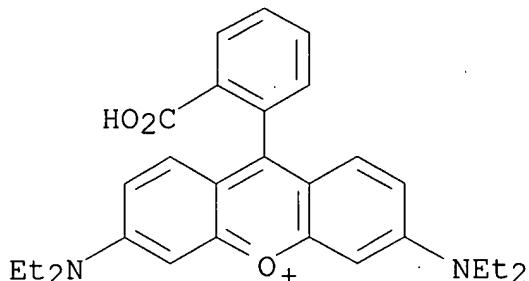
products of leuco dye with)
 IT 129-73-7 603-48-5 613-11-6 1249-97-4 **4344-42-7**
 (photoimaging and thermal recording materials contg. reaction
 products of oxidized dye with)

L55 ANSWER 43 OF 47 HCA COPYRIGHT 2005 ACS on STN
 95:88990 Laser recording materials. (Nippon Telegraph and Telephone
 Public Corp., Japan). Jpn. Kokai Tokkyo Koho JP 56016948
19810218 Showa, 4 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1979-92646 19790723.

AB **Recording** layers of **optical** memory devices are
 prep'd. by using a dye whose absorption max. wavelength coincides
 with the wavelength of the recording light. Thus, an Al-laminated
 support was coated by vapor deposition with an oxazine type dye of
 formula C₂₀H₂₆C₁N₃O₅ (ClO₄- salt; broad absorption peak at
 .apprx.600 nm) to give a laser recording sheet which showed good
 sensitivity to a He-Ne laser beam (633 nm).

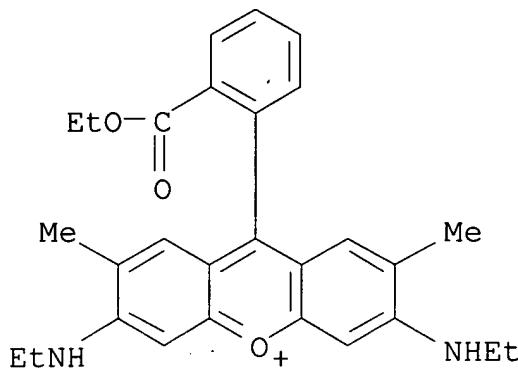
IT **81-88-9 989-38-8**
 (laser recording **sheet** contg.)

RN 81-88-9 HCA
 CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
 (9CI) (CA INDEX NAME)



● Cl⁻

RN 989-38-8 HCA
 CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-
 dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl-

IC G11B007-24; B41M005-00; G11C013-04
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic
 Processes)
 IT **Recording**
 (optical, optical, laser, dyes for)
 IT **81-88-9 989-38-8** 1562-85-2
 (laser recording sheet contg.)

=> d his 156-

FILE 'HCA' ENTERED AT 17:13:03 ON 24 JUN 2005
 L56 196523 S 3D OR 3(W)D OR (3 OR THREE) (2A)DIMEN?
 L57 0 S L55 AND L56
 L58 11 S L43 AND L56
 L59 821 S (L33 OR L34) AND (L17 OR L18)
 L60 45 S L59 AND (L28 OR L29 OR L39 OR L40 OR L41)
 L61 10 S L60 AND L56
 L62 2 S L61 NOT (L49 OR L50)
 L63 3 S L60 AND L53
 L64 2 S L63 NOT (L49 OR L50 OR L62)
 L65 21 S L60 NOT (L49 OR L50 OR L62 OR L64)
 L66 21 S L65 AND (1900-2003/PY OR 1900-2003/PRY)

=> d 162 1-2 cbib abs hitstr hitind

L62 ANSWER 1 OF 2 HCA COPYRIGHT 2005 ACS on STN
 131:94756 Enhancement of two-photon initiated coloration by energy
 transfer from dye to photochromic molecules in polymer films.

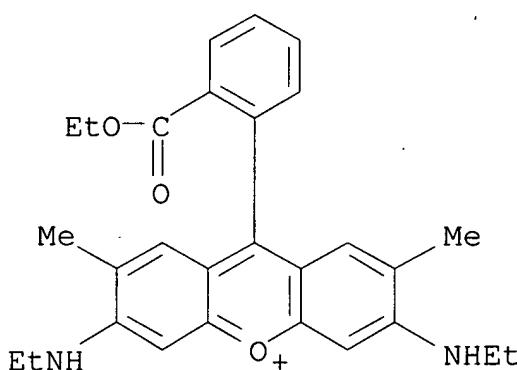
Angeluts, A. A.; Koroteev, N. I.; Krikunov, S. A.; Magnitskii, S. A.; Malakhov, D. V.; Shubin, V. V.; Potokov, P. M. (International Laser Center of Moscow State University, Moscow, 119899, Russia). Proceedings of SPIE-The International Society for Optical Engineering, 3732(Laser Spectroscopy and Optical Diagnostics: Novel Trends and Applications in Laser Chemistry, Biophysics, and Biomedicine), 232-238 (English) 1999. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The method of increasing writing efficiency in **3D optical** data **storage** system is proposed. This method is based on the energy transfer from material with high two photon absorption (TPA) to the photochromic mols. in thin polymer film. This method allows to increase the writing efficiency of informative media more then one order of magnitude.

IT **989-38-8**, Rhodamine 6G
(energy donor; **3D optical** data **storage** system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

RN 989-38-8 HCA

CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



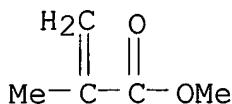
● Cl⁻

IT **9011-14-7, PMMA**
(matrix; **3D optical** data **storage** system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
CMF C5 H8 O2

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **optical data storage** energy transfer fluorescent dye photochromic mol

IT Absorption spectra
Fluorescence
 Optical memory devices
 Optical recording
Photochromic materials
Photoinduced energy transfer
 (**3D optical data storage** system
 with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

IT UV and visible spectra
 (absorption; **3D optical data storage**
 system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

IT Polyvinyl butyral
 (matrix; **3D optical data storage**
 system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

IT 193020-13-2 229643-28-1
 (**3D optical data storage** system
 with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

IT 229643-25-8 229643-26-9
 (energy acceptor; **3D optical data storage** system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

IT **989-38-8**, Rhodamine 6G 229643-27-0
 (energy donor; **3D optical data storage** system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

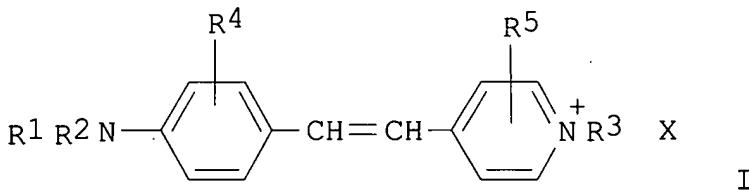
IT **9011-14-7**, PMMA
 (matrix; **3D optical data storage**

system with increased recording efficiency based on energy transfer from two-photon absorbing dye to photochromic mol.)

L62 ANSWER 2 OF 2 HCA COPYRIGHT 2005 ACS on STN

126:278957 Two-photon upconverting lasing styryl dyes and their applications. Prasad, Paras N.; Bhawalkar, Jayant D.; He, Guang S.; Zhao, Chan F.; Gvishi, Raz; Ruland, Gary E.; Zieba, Jaroslaw; Cheng, Ping Chin; Pan, Shan Jen (Research Foundation of State University of New York, USA). PCT Int. Appl. WO 9709043 A1 19970313, 210 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1996-US14523 19960905. PRIORITY: US 1995-3296 19950906; US 1995-5924 19951027; US 1995-10330 19951215; US 1996-25798 19960827.

GI



AB The dyes [I; R1-R3 = (un)substituted alkyl or aryl; R4, R5 = H, alkyl, alkoxy, hydroxyalkyl, carboxyalkyl, sulfoalkyl; X (if needed) = counterion] and compns. contg. them or their analogs are useful in detecting IR radiation, producing singlet oxygen, killing viruses, and recording and reading data in **3 dimensions**. Thus, 4-HOCH₂CH₂NETC₆H₄CHO and N,4-dimethylpyridinium iodide were prep'd. and condensed and anion-exchanged to give trans-I (R1 = HOCH₂CH₂, R2 = Et, R3 = Me, R4 = R5 = H, X = Ph₄B⁻), which was incorporated at 1.5 mmol/L in a 50-.mu.m polyurethane coating. The coating film showed a localized bright red emission when irradiated with a Nd-YAG laser IR beam, the emission intensity varying with the square of the incident beam intensity for intensities $I \text{ to } 5 \text{ MW/cm}^2$.

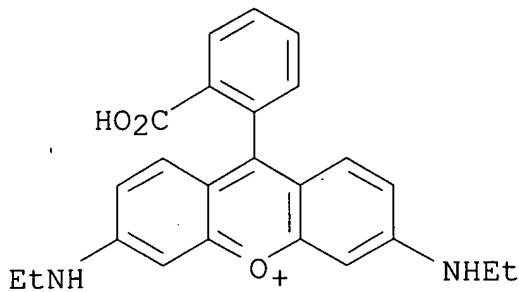
IT **2768-89-0**, Rhodamine G

(laser dye; in manuf. of optically responsive composites contg. styrylpyridinium dyes)

RN 2768-89-0 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(ethylamino)-, chloride (9CI)

(CA INDEX NAME)

● Cl⁻

IT 9011-14-7, Poly(methyl methacrylate)

(silica composite; sol-gel glass matrix for styrylpyridinium dyes for conversion of IR to visible radiation)

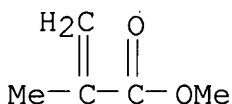
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



IC ICM A61K031-44

ICS B29D017-00; C07D213-90; C08F002-46; C09B001-00; C11D001-18; G03C001-725; G03C001-73; G03C001-735; G03C007-46; G01J005-00; H01S003-14

CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 8, 63, 74

ST styrylpyridinium dye upconversion IR radiation; **optical recording three dimensional;**

photodynamic therapy styryl dye

IT **Optical recording**

(styrylpyridinium dyes for)

IT 2768-89-0, Rhodamine G

(laser dye; in manuf. of optically responsive composites contg. styrylpyridinium dyes)

IT **9011-14-7, Poly(methyl methacrylate)**

(silica composite; sol-gel glass matrix for styrylpyridinium dyes for conversion of IR to visible radiation)

=> d 164 1-2 cbib abs hitstr hitind

L64 ANSWER 1 OF 2 HCA COPYRIGHT 2005 ACS on STN

114:249496 Photopolymerizable compositions and **recording**

media. Okuma, Norio; Minami, Toru; Ohayashi, Hiroharu; Noda, Mariko (Canon K. K., Japan; Sanyo Chemical Industries Ltd.). Jpn. Kokai Tokkyo Koho JP 03000704 A2 19910107 Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-132876 19890529.

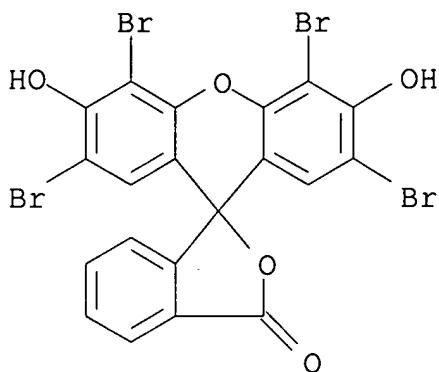
AB The title compns. with high photosensitivity, suitable for one-shot photothermal transfer color recording, contain radical-polymerizable ethylenic double bond-contg. compd. and a photoinitiator including onium compds. Ar₁I+Ar₂B-(Ar₃)₃R₁ (Ar₁, Ar₂, Ar₃ = aryl; R₁ = alkyl, aralkyl, alkaryl, alkenyl, alkynyl, alicyclic group, heterocyclic group). A soln. of trimethylolpropane triacrylate 20, **PMMA** 15, 4,4'-bis(methylthio)benzil 1, Et p-dimethylaminobenzoate 0.5, and (BuC₆H₄)₂I+ -BPh₃Bu (I) 0.8 g in 100 mL dichloromethane was **spin-coated** on Al to a thickness of 4 .μ.m, covered with a poly(vinyl alc.) film, exposed via a 10-step optical wedge, and developed in 1,1,1-trichloroethane to give 9 steps, compared with 5 for a control using Ph₂I+ PF₆⁻ in place of I.

IT **71241-80-0**

(photoinitiators, contg. iodonium borates, for photothermal transfer recording materials)

RN 71241-80-0 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-3',6'-dihydroxy-, monosodium salt (9CI) (CA INDEX NAME)



● Na

IT 9011-14-7, PMMA

(photothermal transfer recording materials contg.,
photoinitiators for)

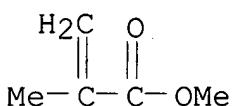
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



IC ICM C08F002-50

ICS G03F007-004; G03F007-028

CC 42-12 (Coatings, Inks, and Related Products)

ST iodonium borate acrylic photopolymer initiator; photothermal transfer
recording media initiator; benzil photoinitiator

photothermal transfer recording

IT 86-39-5 90-47-1, 9H-Xanthan-9-one 569-64-2 1226-42-2,

4,4'-Dimethoxybenzil 6597-43-9 10287-53-3, Ethyl

p-dimethylaminobenzoate 14696-39-0 41996-78-5 53458-17-6

63226-13-1 **71241-80-0** 133954-59-3

(photoinitiators, contg. iodonium borates, for photothermal
transfer recording materials)

IT 9011-14-7, PMMA 36446-02-3, Trimethylolpropane

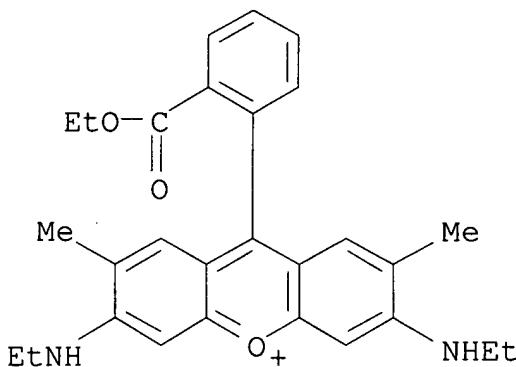
triacrylate polymer 134054-58-3
 (photothermal transfer recording materials contg.,
 photoinitiators for)

L64 ANSWER 2 OF 2 HCA COPYRIGHT 2005 ACS on STN
 97:172511 Optical information carrier. (N. V. Philips' Gloeilampenfabrieken, Neth.). Neth. Appl. NL 8006655 A 19820701, 7 pp. (Dutch). CODEN: NAXXAN. APPLICATION: NL 1980-6655 19801208.
 AB A video or audio long play disk consisting of a 1 mm **poly(Me methacrylate)** support with a photohardened acrylic ester layer forming alternating hill and valley areas differing by 1.1-1.3 .mu., with 0.1-3 .mu. structural information details of the record trace, on at least one side, to be read by an 810-840 nm AlGaAs laser beam, focused by the disk through which it passes, is covered with an antireflection layer of a dye having an absorption const. for the beam <0.2 and a n >2 to aid the read-out. Optical reflection is obtained at the ratio .lambda./2n, where .lambda. the wavelength of the reading beam. Thus, Rhodamine G6 was coated as a 1% soln. in PrOH by **spin-coating** at 1500 rpm to obtain a 40 nm dye layer.

IT 989-38-8
 (antireflection layer contg., for laser readout of video disk information)

RN 989-38-8 HCA

CN Xanthylum, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC G11B007-24; B32B003-30

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST video disk laser readout; **recording video disk**

IT antireflection layer
 IT **Recording materials**
 (video, **disk** with antireflection layer for laser
 readout)
 IT **989-38-8**
 (antireflection layer contg., for laser readout of video
 disk information)

=> d 166 1-21 cbib abs hitstr hitind

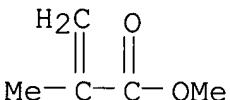
L66 ANSWER 1 OF 21 HCA COPYRIGHT 2005 ACS on STN
 142:347332 Magnetic **recording media** containing
 certain binders with excellent interlayer adhesion, blocking
 resistance, and printability. Orihara, Motoshi; Higashimatsu,
 Hiroshi (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 2005093011 A2 20050407, 13 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2003-327254 20030919.

AB The media, useful for tickets, prepaid cards, and POS labels, have
 magnetic recording layers contg. ferromagnetic materials and Me
 methacrylate-butadiene latexes with gel fraction .gtoreq.95%. The
 media may have thermal-transfer-ink-receiving layers (contg.
 pigments and binders), thermal recording layers (contg.
 electron-donating colorless leuco dyes and electron-accepting color
 developers), or pattern-printed layers on the other side of
 supports.

IT **80-62-6D**, Methyl methacrylate, polymers with butadiene,
 optionally carboxylated
 (binder, recording or intermediate layer; magnetic
recording media contg. Me methacrylate-
 butadiene latex binders with good interlayer adhesion, blocking
 resistance, and printability)

RN 80-62-6 HCA

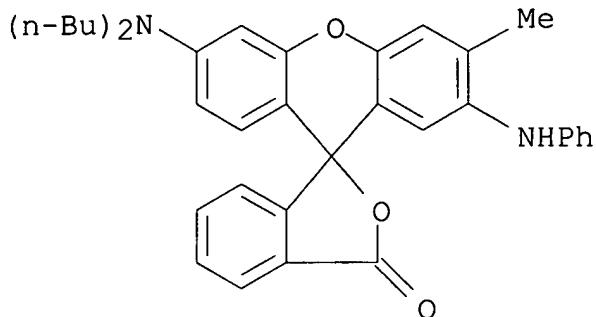
CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



IT **89331-94-2**, 7-Anilino-3-(dibutylamino)-6-methylfluoran
 (leuco dye, thermal recording layer; magnetic **recording**
media contg. Me methacrylate-butadiene latex binders with
 good interlayer adhesion, blocking resistance, and printability)

RN 89331-94-2 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
 6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM G11B005-702
 ICS G11B005-735; G11B005-738; G11B005-80
 CC 77-8 (Magnetic Phenomena)
 Section cross-reference(s): 38, 74
 IT Acrylic polymers, uses
 Polyurethanes, uses
 (emulsion, binder, recording layer; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT Polyesters, uses
 (emulsion, thermal-transfer-ink-receiving layer; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT Binders
 Magnetic memory devices
 (magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT Thermal-transfer printing materials
 (receptors; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT Thermal printing materials
 (sheets; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT Paper
 (support; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT 9003-55-8, Butadiene-styrene copolymer
 (binder, intermediate layer; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with good interlayer adhesion, blocking resistance, and printability)
 IT **80-62-6D**, Methyl methacrylate, polymers with butadiene,

optionally carboxylated 106-99-0D, Butadiene, polymers with Me methacrylate, optionally carboxylated
 (binder, recording or intermediate layer; magnetic **recording media** contg. Me methacrylate-
 butadiene latex binders with good interlayer adhesion, blocking
 resistance, and printability)

IT 95235-30-6, 4-Hydroxy-4'-isopropoxydiphenyl sulfone
 (color developer, thermal recording layer; magnetic **recording media** contg. Me methacrylate-
 butadiene latex binders with good interlayer adhesion, blocking
 resistance, and printability)

IT 11138-11-7, MC 127
 (ferromagnetic powder, recording layer; magnetic **recording media** contg. Me methacrylate-
 butadiene latex binders with good interlayer adhesion, blocking
 resistance, and printability)

IT 89331-94-2, 7-Anilino-3-(dibutylamino)-6-methylfluoran
 (leuco dye, thermal recording layer; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with
 good interlayer adhesion, blocking resistance, and printability)

IT 7631-86-9, Silica, uses
 (pigment, thermal-transfer-ink-receiving layer; magnetic **recording media** contg. Me methacrylate-
 butadiene latex binders with good interlayer adhesion, blocking
 resistance, and printability)

IT 9002-89-5, Poly(vinyl alcohol)
 (thermal-transfer-ink-receiving layer; magnetic **recording media** contg. Me methacrylate-butadiene latex binders with
 good interlayer adhesion, blocking resistance, and printability)

L66 ANSWER 2 OF 21 HCA COPYRIGHT 2005 ACS on STN

141:322657 Thermal printing sheets for coverings of plastic cards.

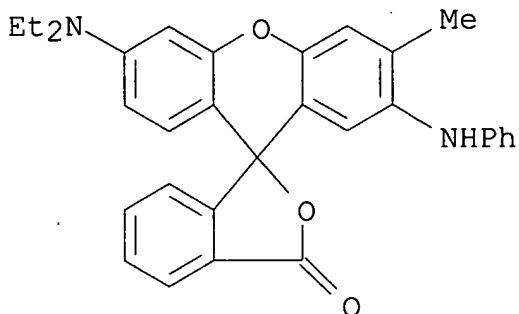
Maruyama, Atsushi (Mitsubishi Paper Mills, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004276339 A2 20041007, 22 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-68828 20030313.

AB The thermal printing sheets, useful for covering of plastic cards which are formed by heat bonding of .gtoreq.1 plastic sheets, contain color formers and color developers, wherein either or both grains of the color formers and developers are coated with polymer layers. The polymer layers work as neg. heat sensitizers, so that the printing sheets inhibit fogging upon heat bonding of the plastic sheets. The plastic cards may be of magnetic **recording** cards, **optical recording** cards, IC cards, etc.

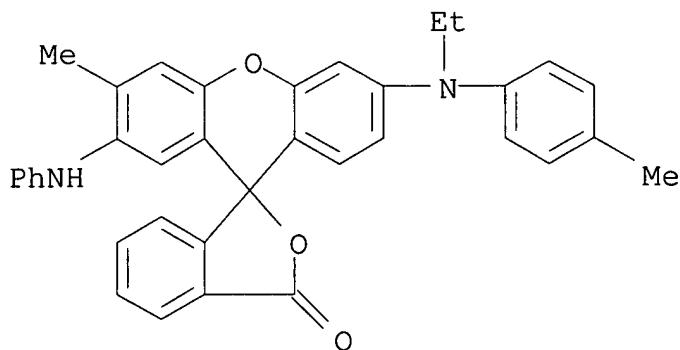
IT 29512-49-0, 3-Diethylamino-6-methyl-7-anilinofluoran
 59129-79-2

(color formers; thermal printing sheet contg. heat desensitizing polymer coating on color former and/or color developer, for covering plastic cards)

RN 29512-49-0 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(diethylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



RN 59129-79-2 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(ethyl(4-methylphenyl)amino)-3'-methyl-2'-(phenylamino)- (9CI)
 (CA INDEX NAME)

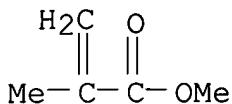


IT **9011-14-7P**, Methyl methacrylate homopolymer
 (heat-desensitizing coatings; thermal printing sheet contg. heat
 desensitizing polymer coating on color former and/or color
 developer, for covering plastic cards)

RN 9011-14-7 HCA
 CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
 INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



IC ICM B41M005-28
 ICS B41M005-26; B42D015-10
 CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 73, 76, 77
 IT **29512-49-0**, 3-Diethylamino-6-methyl-7-anilinofluoran
59129-79-2 106790-31-2
 (color formers; thermal printing sheet contg. heat desensitizing polymer coating on color former and/or color developer, for covering plastic cards)
 IT 9003-53-6P, Styrene homopolymer **9011-14-7P**, Methyl methacrylate homopolymer 25777-71-3P, Ethylene glycol dimethacrylate-methyl methacrylate copolymer
 (heat-desensitizing coatings; thermal printing sheet contg. heat desensitizing polymer coating on color former and/or color developer, for covering plastic cards)

L66 ANSWER 3 OF 21 HCA COPYRIGHT 2005 ACS on STN
 139:401562 Nanocapcule composition for thermosensitive rewritable **recording medium**, manufacture thereof using emulsion polymerization, and toner composition therefrom. Kim, Yun-Kyoun; Kim, Yun-Soon; Kim, Soo-Kyun (Korea Research Institute of Chemical Technology, S. Korea; Dongkuk University; Union Chemical Inc.). Jpn. Kokai Tokkyo Koho JP 2003330219 A2 **20031119**, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-110560 20030415. PRIORITY: KR 2002-25082 20020507.

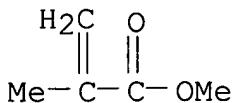
AB The nanocapsule compn. comprises a color forming compd. 0.1-30, a developer 0.1-60, a radically polymerizable monomer 15-80, a radical polymn. initiator 0.1-10, and a solvent 20-80 wt. parts, wherein the polymer prep. from the monomer constitutes a capsule of a core/shell structure encapsulating the color forming compd. and the developer. The process involving the emulsion polymn. at 50-150.degree. for 2 hs - 7 days is also claimed. The toner compn. made from a grain 3-97 wt. parts prep. from the nanocapsule compn. and a charge-controller 0.01-50 wt. parts is also claimed.

IT **9011-14-7P, Polymethyl methacrylate**
 (nanocapsule compn. for thermosensitive rewritable **recording medium**)

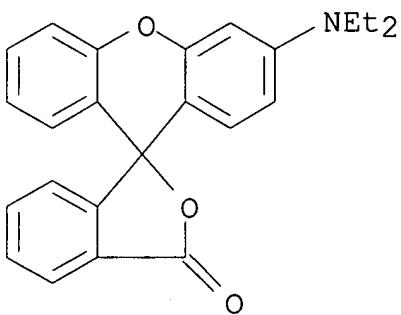
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

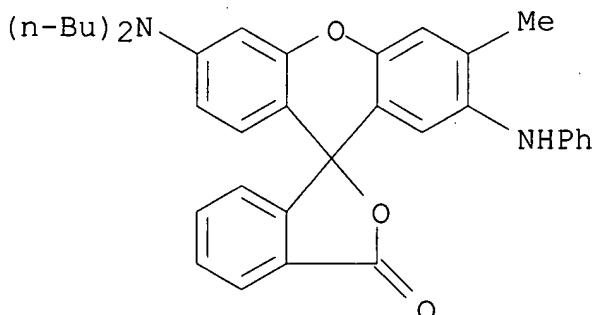
CM 1

CRN 80-62-6
CMF C5 H8 O2IT **36782-99-7 89331-94-2**(nanocapsule compn. for thermosensitive rewritable
recording medium)

RN 36782-99-7 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3'-(diethylamino)-
(9CI) (CA INDEX NAME)

RN 89331-94-2 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)

IC ICM G03G009-08

ICS B01J013-14; G03G009-087; G03G009-09

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

IT Section cross-reference(s): 35, 38

IT Nanoparticles
(emulsion polymn. in manuf. of nanocapsule compn. for thermosensitive rewritable **recording medium**)

IT Polymerization
(emulsion; emulsion polymn. in manuf. of nanocapsule compn. for thermosensitive rewritable **recording medium**)

IT Electrographic toners
Electrophotographic toners
(toner from nanocapsule compn. for thermosensitive rewritable **recording medium**)

IT 25213-39-2P, Butyl methacrylate-styrene copolymer
(emulsion polymn. in manuf. of nanocapsule compn. for thermosensitive rewritable **recording medium**)

IT 9003-53-6P, Polystyrene **9011-14-7P, Polymethyl methacrylate** 9017-48-5P, Butyl methacrylate-divinylbenzene-styrene copolymer 26634-89-9P, Butyl methacrylate-methyl methacrylate-styrene copolymer
(nanocapsule compn. for thermosensitive rewritable **recording medium**)

IT 1552-42-7, 3,3-Bis(p-dimethylaminophenyl)-6-dimethylaminophthalide
27333-47-7 **36782-99-7 89331-94-2** 95235-30-6,
4-Hydroxy-4'-isopropoxy-diphenylsulfone 219559-99-6
(nanocapsule compn. for thermosensitive rewritable **recording medium**)

L66 ANSWER 4 OF 21 HCA COPYRIGHT 2005 ACS on STN
139:181104 Luminescing and/or fluorescing radiation-curable, cyanoacrylate-containing compositions, polymerizing compositions, and use. Wojciak, Stan (Henkel Loctite Corporation, USA). PCT Int. Appl. WO 2003065841 A1 **20030814**, 43 pp. DESIGNATED
STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
APPLICATION: WO 2002-US34442 20021029. PRIORITY: US 2002-PV353963 20020205.

AB A radiation-curable compn. includes a cyanoacrylate component or a cyanoacrylate-contg. formulation, a metallocene component, a hydrogen abstraction photoinitiator, and a luminescent and/or fluorescent dye. The dye has the ability to indicate a first color in the uncured state and a second color in the cured state. An adhesive compn. contained .apprx.95.9 g Et 2-cyanoacrylate, .apprx.0.01 g ferrocene, .apprx.0.5 g Irgacure 819 photoinitiator,

.apprx.3.5 g **polymethyl methacrylate**, and a fluorescent dye such as fluoranthene.

IT 9011-14-7, Polymethyl methacrylate

13473-26-2

(luminescing and/or fluorescing radiation-curable, cyanoacrylate-contg. compns.)

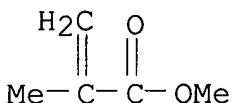
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

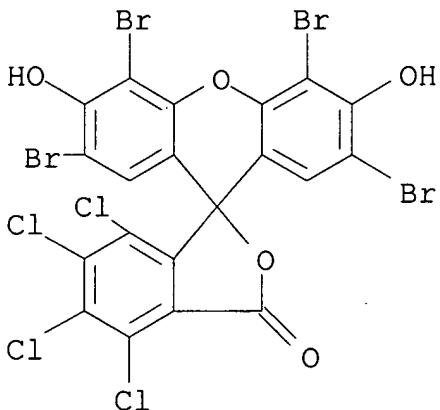
CRN 80-62-6

CMF C5 H8 O2



RN 13473-26-2 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
2',4',5',7'-tetrabromo-4,5,6,7-tetrachloro-3',6'-dihydroxy- (9CI)
(CA INDEX NAME)



IC ICM A45D031-00

ICS C08F002-46; C08F004-42; C09J004-04

CC 38-3 (Plastics Fabrication and Uses)

IT Recording materials

(disk drives; luminescing and/or fluorescing
radiation-curable, cyanoacrylate-contg. compns. for)

IT 206-44-0, Fluoranthene 9011-14-7, Polymethyl

methacrylate 13473-26-2

(luminescing and/or fluorescing radiation-curable,

cyanoacrylate-contg. compns.)

L66 ANSWER 5 OF 21 HCA COPYRIGHT 2005 ACS on STN

137:132194 **Optical recording medium**

laminated with visible **information recording**

layer and its manufacture. Azuma, Hiroshi; Takemoto, Shinya; Terai, Tomohiko (Mitsubishi Plastics Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002219873 A2 **20020806**, 7 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2001-17450 20010125.

AB The **medium for optically recording**

electronic **information** has the title layer for reversibly displaying or erasing visible information by heat or light. The medium is manufd. by placing a visible **information**

recording layer on a releasable substrate, forming an

adhesive layer on the other side of the layer, bonding the adhesive layer to a **optical recording medium**,

and releasing the substrate. The medium is suitable for CD-R or CD-RW to show contents in visible state on the disks without sticking labels on the medium.

IT **9011-14-7, Poly(methyl**

methacrylate) 97628-33-6, 3-Methylisobutylamino-6-
methyl-7-anilinofluoran

(visible **recording** layer contg.; **optical**
recording medium laminated with visible
information recording layer and its manuf.)

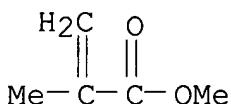
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

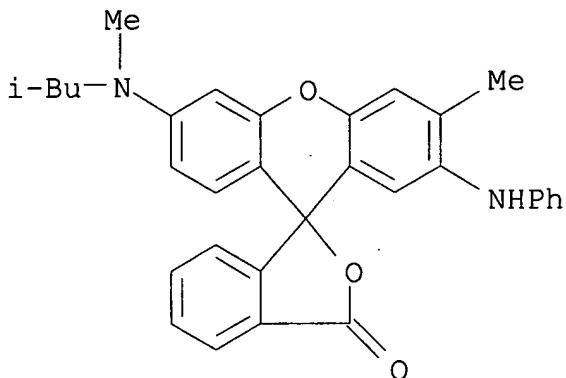
CRN 80-62-6

CMF C5 H8 O2



RN 97628-33-6 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
3'-methyl-6'-(methyl(2-methylpropyl)amino)-2'-(phenylamino)- (9CI)
(CA INDEX NAME)



IC ICM B41M005-36
 ICS B41M005-26; G11B007-24; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **optical recording medium** visible
information recording laminate

IT Erasable **optical disks**
 Lamination
 (**optical recording medium** laminated
 with visible **information recording** layer and
 its manuf.)

IT **Optical recording**
 Thermal printing
 (visible **information** by; **optical**
recording medium laminated with visible
information recording layer and its manuf.)

IT Polyesters, uses
 (visible **recording** layer contg.; **optical**
recording medium laminated with visible
information recording layer and its manuf.)

IT **Optical disks**
 (write-once read-many; **optical recording**
medium laminated with visible **information**
recording layer and its manuf.)

IT 112-85-6, Behenic acid 124-26-5, Stearylamine 693-23-2,
 Dodecanedioic acid 9003-22-9, Solbin C **9011-14-7**,
Poly(methyl methacrylate) 37337-82-9,
 Vylon 200 58574-03-1, 4-(4-Hydroxyphenyl)benzoic acid
97628-33-6, 3-Methylisobutylamino-6-methyl-7-anilinofluoran
 423762-63-4, D 99-038
 (visible **recording** layer contg.; **optical**
recording medium laminated with visible
information recording layer and its manuf.)

L66 ANSWER 6 OF 21 HCA COPYRIGHT 2005 ACS on STN

137:13015 Active **media** for polymer **optical** fiber

laser amplifiers. Koike, Yasuhiro; Takatani, Akihiro; Kuriki, Ken (Foundation for Scientific Technology Promotion, Japan; Kanagawa Academy of Science and Technology; Keio University). Jpn. Kokai Tokkyo Koho JP 2002171014 A2 **20020614**, 5 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2000-367226 20001201.

AB The amplifiers comprise a **PMMA** optical fiber matrix doped with Rhodamine 6G, tri-Ph phosphate and/or di-Ph sulfide. It improves the light resistance of the polymer optical fiber laser. Mixing **optical** active **medium** in the matrix which uses the polymer material, the low-mol. substance where the reactivity for **optical** active **medium** with comparison with the matrix polymer in the active medium for the polymer optical fiber laser which is formed to optical fiber condition, is small relatively with **optical** active **medium** by the fact that it makes mix in the matrix, it actualizes the improvement of light resistance.

IT **9011-14-7, PMMA**

(active **media** for polymer **optical** fiber laser amplifiers)

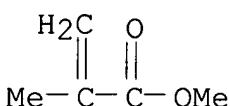
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2

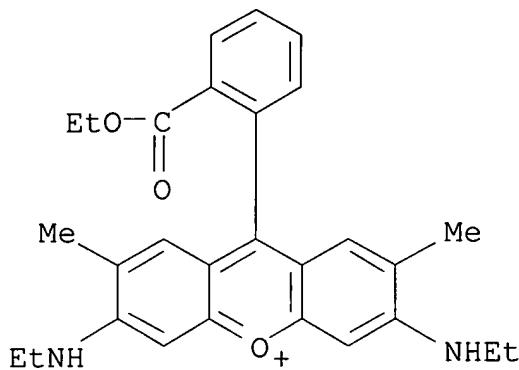


IT **989-38-8, Rhodamine 6G**

(active **media** for polymer **optical** fiber laser amplifiers)

RN 989-38-8 HCA

CN Xanthylum, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl-

IC ICM H01S003-06
 ICS G02B006-18; H01S003-10; H01S003-17
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT **Optical** amplifiers
 Optical fibers
 (active **media** for polymer **optical** fiber laser amplifiers)
 IT Lasers
 (fiber; active **media** for polymer **optical** fiber laser amplifiers)
 IT **9011-14-7, PMMA**
 (active **media** for polymer **optical** fiber laser amplifiers)
 IT 115-86-6, Triphenyl phosphate 139-66-2, Diphenyl sulfide
989-38-8, Rhodamine 6G
 (active **media** for polymer **optical** fiber laser amplifiers)

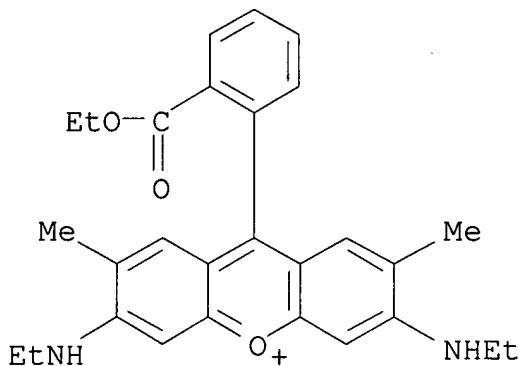
L66 ANSWER 7 OF 21 HCA COPYRIGHT 2005 ACS on STN
 135:83872 Photon statistics of the laserlike emission from polymeric scattering gain **media** with tissue-like **optical** properties. Zacharakis, Giannis; Papadogiannis, Nektarios A.; Filippidis, George; Papazoglou, Theodore G. (Institute of Electronic Structures and Laser, Laser and Applications Division, Foundation for Research and Technology-Hellas, Heraklion, Crete, GR-71110, Greece). Proceedings of SPIE-The International Society for Optical Engineering, 4162 (Controlling Tissue Optical Properties), 30-38 (English) 2000. CODEN: PSISDG. ISSN: 0277-786X.
 Publisher: SPIE-The International Society for Optical Engineering.

AB The coherent properties of the temporally and spectrally narrowed emission of laser-induced fluorescence of org. dyes hosted inside artificial scattering matrixes (random lasers) were studied. The excitation source was a frequency doubled 200 fs pulsed laser emitting at 400 nm. Spectral and temporal features were simultaneously recorded using a spectrograph and a streak camera operating on the photon counting mode. Photon no. distributions were thus created. The temporal coherence of the laser-like emission above and below the excitation energy threshold was studied from the photon no. distribution obtained.

IT **989-38-8**, rhodamine 6G
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

RN 989-38-8 HCA

CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



IT **9011-14-7, PMMA**
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

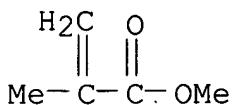
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT Electromagnetic wave scattering
Laser induced fluorescence
Lasers
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

IT Photon
(statistics of; photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

IT **989-38-8**, rhodamine 6G
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

IT **9011-14-7, PMMA**
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

IT 13463-67-7, Titania, properties
(photon statistics of laserlike emission from polymeric scattering gain **media** with tissuelike **optical** properties)

L66 ANSWER 8 OF 21 HCA COPYRIGHT 2005 ACS on STN
 133:263435 Fluorescence IgG immunosensor based on a micro flow cell containing controlled pore glass as immobilisation support. Vidal, Monica; Prata, Manuel; Santos, Susana; Tavares, Teresa; Oliva, Abel; Hossfeld, Jens; Preininger, Claudia (Biosensors Lab., Inst. Tecnol. Quim. Biol., Universidade Nova de Lisboa, Oeiras, Port.). Analyst (Cambridge, United Kingdom), 125(8), 1387-1391 (English)

2000. CODEN: ANALAO. ISSN: 0003-2654. Publisher: Royal Society of Chemistry.

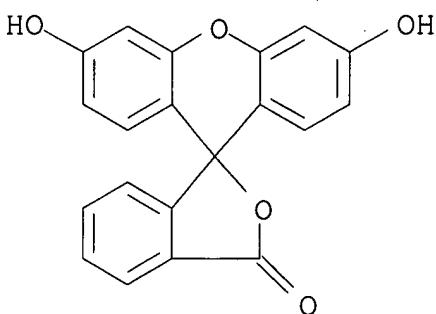
AB Biosensor miniaturization often requires the construction of micro vol. cells using micro-machining techniques. In this work, a micro flow cell made of a transparent polymer [**poly(Me methacrylate)**] developed for using with a fluorescence IgG immunosensor is described. The micro flow cell provides space to enclose a small amt. of controlled pore glass (CPG), a transparent support that can host and covalently bind the biomols. The immobilization of IgG on CPG permits the development of an optical immunosensor for the detection of fluorescein isothiocyanate

(FITC)-labeled anti-IgG. In this immunosensor the excitation light is provided by an argon ion laser and guided by an optical fiber to the flow cell, where the fluorescence signal is filtered by a long-pass barrier filter (OG515) and then detected by a close positioned photodiode. This signal was found to be proportional to the amt. of anti-IgG-FITC bound to the immobilized IgG during a direct immunochem. reaction. Characterization of the CPG as an **optical medium** and immobilization support was performed. CPG produces intense light scattering and good permeability to fluids, and also a typical immobilization rate for IgG of about 90% of the initial amt. of antibody. The described immunosensor shows a detection limit for anti-IgG-FITC of 6.3 nM and a sensitivity of 9.5 .mu.V nM-1. This immunoptode developed with a micro flow cell has been shown to be a suitable system for the detection of Igs.

IT 27072-45-3, FITC
 (conjugates with antibodies; fluorescence IgG immunosensor based on a micro flow cell contg. controlled pore glass as immobilization support)

RN 27072-45-3 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
 3',6'-dihydroxy-5(or 6)-isothiocyanato- (9CI) (CA INDEX NAME)



D1—N≡C≡S

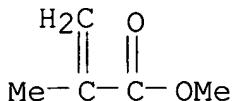
IT 9011-14-7, [Poly(methyl methacrylate)]
 (fluorescence IgG immunosensor based on a micro flow cell contg. controlled pore glass as immobilization support)

RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



CC 9-10 (Biochemical Methods)

IT **27072-45-3**, FITC

(conjugates with antibodies; fluorescence IgG immunosensor based on a micro flow cell contg. controlled pore glass as immobilization support)

IT **9011-14-7, [Poly(methyl methacrylate)]**

(fluorescence IgG immunosensor based on a micro flow cell contg. controlled pore glass as immobilization support)

L66 ANSWER 9 OF 21 HCA COPYRIGHT 2005 ACS on STN

133:112437 Thermal recording material for counterfeit deterrence.

Hiraishi, Shigetoshi; Masuda, Takao; Kato, Takahisa (Mitsubishi Paper Mills, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000203160 A2 **20000725**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-9155 19990118.

AB The title thermal recording material comprises a support coated with a heat-sensitive layer contg. an electron-accepting compd. and 2 types of electron-donating compds. which react with the electron-accepting compd. to form images showing absorption in near IR regions and no absorption substantially in the regions. Visible **information** can be **recorded** arbitrarily in the material and invisible patterns can be formed in the random portions at the same time.

IT **9011-14-7P, Poly(methyl methacrylate)**

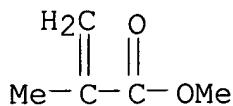
(coloration-controlling layer; thermal printing material for counterfeit deterrence)

RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2

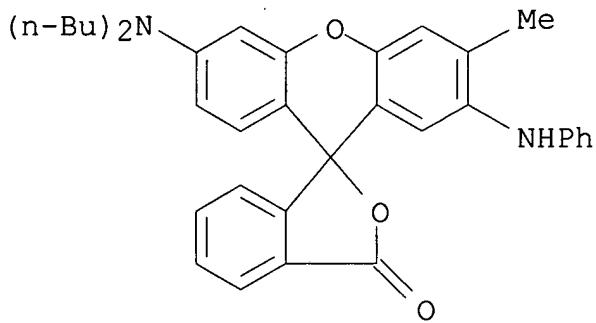


IT **89331-94-2**, 3-Di-butylamino-6-methyl-7-anilinofluoran
114192-14-2

(electron donating compd.; thermal printing material for
 counterfeit deterrence)

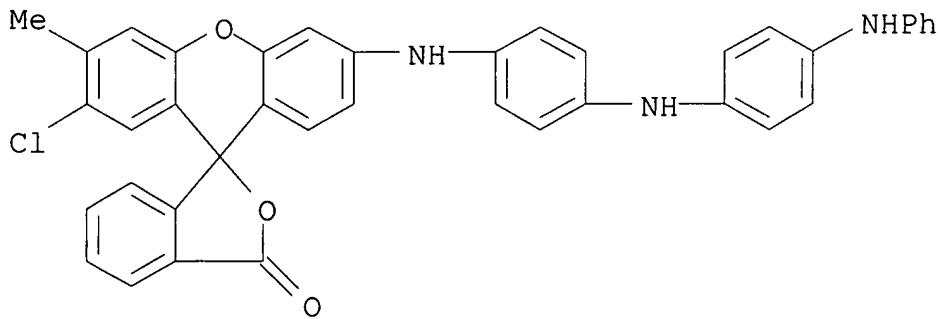
RN 89331-94-2 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



RN 114192-14-2 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 2'-chloro-3'-methyl-6'-(4-[[4-(phenylamino)phenyl]amino]phenyl)amino- (9CI) (CA INDEX NAME)

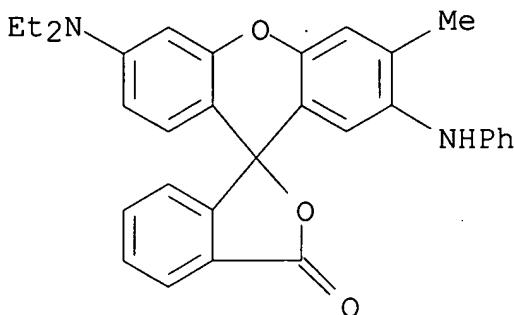


IT **29512-49-0**

(thermal printing material for counterfeit deterrence)

RN 29512-49-0 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(diethylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
ICS B41M005-30

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **9011-14-7P, Poly(methyl methacrylate)**
(coloration-controlling layer; thermal printing material for counterfeit deterrence)

IT 61421-84-9, 3,3-Bis[2-(p-dimethylaminophenyl)-2-(p-methoxyphenyl)vinyl]-4,5,6,7-tetrachloro phthalide 85391-59-9, 3,6-Bis(dimethylamino)fluorene-9-spiro-3'-(6'-dimethylamino)phthalide **89331-94-2**, 3-Di-butylamino-6-methyl-7-anilinofluoran **114192-14-2**
(electron donating compd.; thermal printing material for counterfeit deterrence)

IT **29512-49-0**
(thermal printing material for counterfeit deterrence)

L66 ANSWER 10 OF 21 HCA COPYRIGHT 2005 ACS on STN
130:274159 Holographic **recording**, its **medium**
including light modulator, reproduction, and device therefor. Kono, Katsunori; Sakamoto, Akira; Baba, Kazuo (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11102425 A2 **19990413**
Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-260590 19970925.

AB The **information medium** includes the 1st wave plane contg. a holog. region and the 2nd wave plane for ref., where the 2nd wave plane is modified by a "locking" information. The "locking" information may be a 2-dimensional image or a cord based on the registered-one's-own data, and prevents non-registered one from reading recorded data. For **recording**, the **medium** is simultaneously irradiated with (i) a signal light (L1) which is modified by the 1st spatial modulator and with (ii) a ref. light (L2) which is modified by the "locking" information in the 2nd spatial modulator. The hologram is reproduced by irradn. of the medium with a reading light with the same wave plane to that of L2 to obtain a diffraction light with the same wave plane to that of

L1. The reading light may be Fourier transformed. Apps. for the holog. and its reprodn., resp., are also claimed.

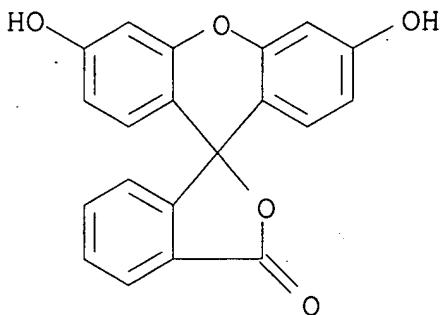
IT 518-47-8, Uranine 9011-14-7, Poly(
methyl methacrylate) 16423-68-0,

Erythrosin B

(holog. **recording**/reproducing **media** including
light modulator for data locking)

RN 518-47-8 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-,
disodium salt (9CI) (CA INDEX NAME)



●2 Na

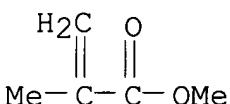
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
INDEX NAME)

CM 1

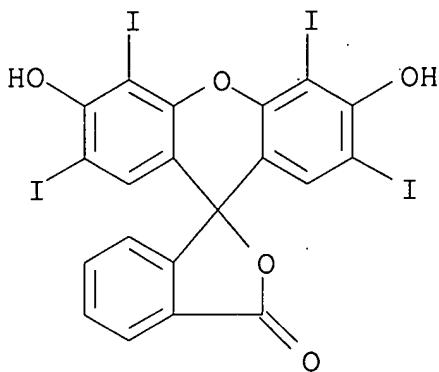
CRN 80-62-6

CMF C5 H8 O2



RN 16423-68-0 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
3',6'-dihydroxy-2',4',5',7'-tetraiodo-, disodium salt (9CI) (CA
INDEX NAME)



●2 Na

IC ICM G06K019-10
 ICS B42D015-10; C08K005-15; C08K005-23; C08L029-04; C08L033-12;
 C08L067-02; G02F001-13; G03F007-004; G03H001-02; G03H001-16;
 G03H001-18; G03H001-22; G06K017-00; G06K019-06; G07F007-08;
 G11B007-24

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

IT Mathematical methods
 (Fourier-transform; holog. **recording**/reproducing
media including light modulator for data locking)

IT Information systems
 (code; holog. **recording**/reproducing **media**
 including light modulator for data locking)

IT Polyesters, processes
 (cyanoazobenzene-branched; holog. **recording**/reproducing
media including light modulator for data locking)

IT Fingerprints (skin pattern)
 Holographic recording materials
 Photographs
 Photorefractive materials
 Seals (parts)
 Spatial light modulators
 (holog. **recording**/reproducing **media** including
 light modulator for data locking)

IT Eye
 (iris; holog. **recording**/reproducing **media**
 including light modulator for data locking)

IT Polymers, processes
 (photo-; holog. **recording**/reproducing **media**
 including light modulator for data locking)

IT 493-52-7, Methyl red
 (dispersed in **PMMA**; holog. **recording**
 /reproducing **media** including light modulator for data
 locking)

IT 547-58-0, Methylorange
 (dispersed in PVA; holog. **recording**/reproducing
media including light modulator for data locking)

IT 518-47-8, Uranine 9002-89-5, Poly(vinyl alcohol)
9011-14-7, Poly(methyl
methacrylate) 12047-27-7, Barium titanate, processes
16423-68-0, Erythrosin B
 (holog. **recording**/reproducing **media** including
 light modulator for data locking)

IT 12031-63-9, Lithium niobate
 (iron doped; holog. **recording**/reproducing **media**
 including light modulator for data locking)

IT 7439-89-6, Iron, processes
 (lithium niobate doped with; holog. **recording**
 /reproducing **media** including light modulator for data
 locking)

L66 ANSWER 11 OF 21 HCA COPYRIGHT 2005 ACS on STN

130:18937 Reversible heat-sensitive **recording medium**
 containing thermoplastic resin. Kawamura, Fumio; Tatewaki,
 Tadafumi; Furuya, Hiromi; Tsutsui, Kyoji; Shimada, Masaru (Ricoh
 Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10287048 A2
19981027 Heisei, 26 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1997-110433 19970411.

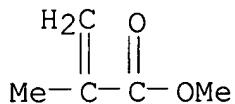
AB The recording material has a reversible heat sensitive recording
 layer contg. a reversible heat sensitive coloring compn., which
 colors and discolors according to the difference of heating temp. or
 of cooling temp. after heating, having an electron donating coloring
 compd. and an electron accepting compd. on a substrate. The
 recording material comprises the reversible heat sensitive recording
 layer contg. a thermoplastic of the .gt;eq. 300,000 wt. av. mol.
 wt. corresponding to polystyrene measured by a GPC, a middle layer,
 and a protective layer contg. a heat-curable resin on the reversible
 heat sensitive layer. The **recording medium**
 shows the excellent coloring/descoloring characteristics, little
 mark caused by previous recordings, the low color concn. of the
 background part, and little reduced image concn. after kept under
 various environments.

IT **9011-14-7, Dianal BR 85 59129-79-2,**
 2-Anilino-3-methyl-6-N-ethyl-N-p-tolylaminofluoran
89331-94-2
 (reversible heat-sensitive **recording medium**)

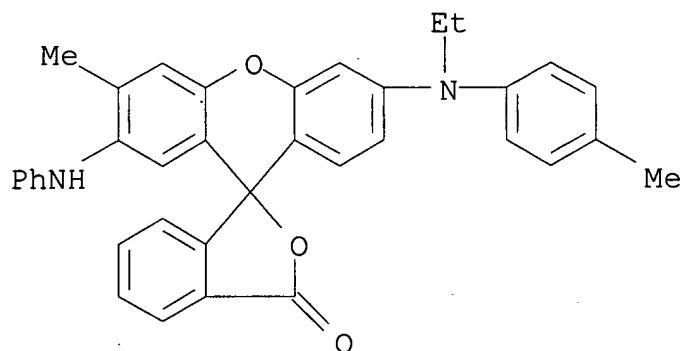
RN 9011-14-7 HCA
 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA)

INDEX NAME)

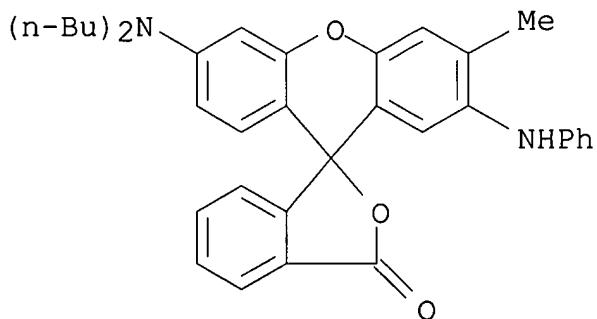
CM 1

CRN 80-62-6
CMF C5 H8 O2

RN 59129-79-2 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(ethyl(4-methylphenyl)amino)-3'-methyl-2'-(phenylamino)- (9CI)
 (CA INDEX NAME)



RN 89331-94-2 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
 CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

ST reversible heat sensitive **recording medium**
thermoplastic
IT Polyvinyl butyrals
(reversible heat-sensitive **recording medium**)
IT Recording materials
(thermal, reversible; reversible heat-sensitive **recording medium** contg. thermoplastic resin)
IT Plastics, uses
(thermoplastics; reversible heat-sensitive **recording medium** contg. thermoplastic resin)
IT 25014-15-7, Poly(2-vinylpyridine)
(resin; reversible heat-sensitive **recording medium**)
IT 9002-89-5, PVA 117 **9011-14-7**, Dianal BR 85 9011-15-8, BR 101 37337-82-9, Vylon 200 39290-68-1, Gohsefimer Z 200 **59129-79-2**, 2-Anilino-3-methyl-6-N-ethyl-N-p-tolylaminofluoran 69898-40-4 **89331-94-2** 102253-20-3 123339-97-9, Uni-DIC C 7-157 138931-88-1, Dianal BR 108 166890-56-8 167379-00-2
(reversible heat-sensitive **recording medium**)

L66 ANSWER 12 OF 21 HCA COPYRIGHT 2005 ACS on STN

129:115668 Reversible heat-sensitive **recording medium**
containing thermoplastic resin. Kawamura, Fumio; Furuya, Hiromi;
Tatewaki, Tadafumi; Tsutsui, Kyoji (Ricoh Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 10151859 A2 **19980609** Heisei, 37 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-324839 19961121.

AB The reversible heat-sensitive **recording medium**
comprises a reversible recording layer contg. a reversible
heat-sensitive coloring compn. which shows different colors by
different heating temps. rate and/or cooling rate after the heating
due to a reaction between electron donating and accepting compds.,
wherein the reversible heat-sensitive recording layer contains
.gtoreq.300,000 wt. av. mol. wt. thermoplastic resin. The
recording medium shows good coloring and
discoloring capability, little deformed image, and good durability.

IT **9011-14-7**, Dianal BR 88 **89331-94-2**
(reversible heat-sensitive recording layer)

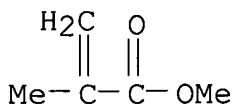
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
INDEX NAME)

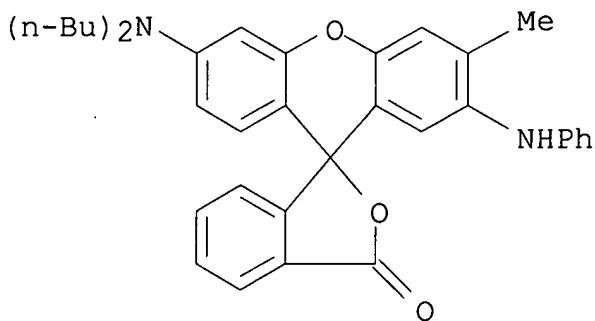
CM 1

CRN 80-62-6

CMF C5 H8 O2



RN 89331-94-2 HCA
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
ST reversible heat sensitive **recording medium**;
thermoplastic resin reversible heat sensitive recording
IT Recording materials
 (thermal; reversible heat-sensitive **recording**
 medium contg. thermoplastic resin)
IT **9011-14-7**, Dianal BR 88 25067-59-8 25685-29-4, Dianal BR
95 69898-40-4, 3-(4-Diethylamino-2-ethoxyphenyl)-3-(1-ethyl-2-
methylindol-3-yl)-4 azaphthalide **89331-94-2** 132467-74-4,
3,3-Bis(2-ethoxy-4-diethylaminophenyl)-4-azaphthalide 138931-88-1,
Dianal BR 108
 (reversible heat-sensitive recording layer)

L66 ANSWER 13 OF 21 HCA COPYRIGHT 2005 ACS on STN
125:127853 Reversible thermal **recording medium**.

Taniguchi, Keiji; Kawamura, Fumio; Tsutsui, Kyoji; Shimada, Masaru; Furuya, Hiromi; Yamaguchi, Takehito (Ricoh Kk, Japan). Jpn. Kokai Tokkyo Koho JP 08127178 A2 **19960521** Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-269602 19941102.

AB The **medium** comprises a **recording** layer contg. an electron-donating coloring compd., an electron-accepting color-developing compd., and a binder resin, coloring and decoloring by temp. change, laminated on a support surface of ≥ 4.5 pH. The electron-donating compd. may be a fluoran compd. and the

electron-accepting compd. may be an org. phosphorus compd. represented by R₁PO(OH)₂ (R₁ = C₆ to C₁₂ aliph. group). The medium shows good decoloring property and improved durability in repeated uses.

IT **9011-14-7, Poly(methyl methacrylate)**

(binder resin; reversible thermal **recording medium** with good decoloring property)

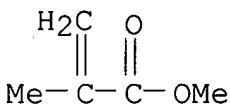
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C₅ H₈ O₂

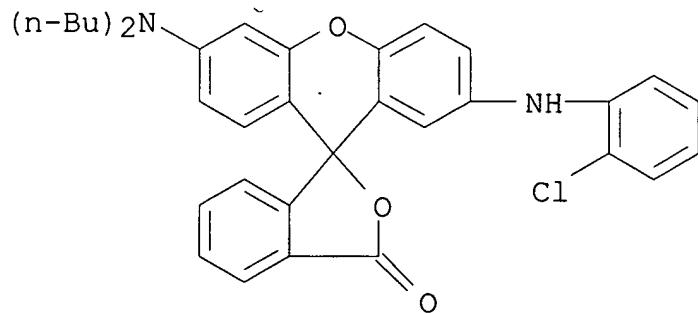


IT **82137-81-3**

(electron-donating compd., recording layer; reversible thermal **recording medium** with good decoloring property)

RN 82137-81-3 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 2'-[(2-chlorophenyl)amino]-6'-(dibutylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
ICS B41M005-30

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST thermal **recording medium** reversible; support pH
recording thermal **medium**

IT pH
(reversible thermal **recording medium** with

IT good decoloring property)

IT Polyesters, properties
(support; reversible thermal **recording medium**
with good decoloring property)

IT Printing, nonimpact
(thermal, reversible thermal **recording medium**
with good decoloring property)

IT **9011-14-7, Poly(methyl**
methacrylate)
(binder resin; reversible thermal **recording**
medium with good decoloring property)

IT 7664-38-2D, Phosphoric acid, Docosyl deriv
(electron-accepting compd., recording layer; reversible thermal
recording medium with good decoloring property)

IT **82137-81-3**
(electron-donating compd., recording layer; reversible thermal
recording medium with good decoloring property)

L66 ANSWER 14 OF 21 HCA COPYRIGHT 2005 ACS on STN

122:303044 Reversible thermal **recording medium**

composition and reversible thermal recording sheet using it.
Hamano, Katsuhisa; Nakabayashi, Yutaka (Nitto Denko Corp, Japan).
Jpn. Kokai Tokkyo Koho JP 06293183 A2 **19941021** Heisei, 6
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-107433
19930408.

AB The compn. contains a coloring-decoloring agent with av. grain size
. $l \leq 10 \mu m$ and a leuco compd. whose av. grain size is smaller
than that of the coloring-decoloring agent. The coloring-decoloring
agent may have carboxyl and/or phenolic OH group optionally having
(alkyl)amino group. The leuco compd. may be a fluoran-deriv. dye.
The recording sheet comprises a substrate coated with the compn.
The sheet gave high-d. and clear images.

IT **9011-14-7**, Dianal BR 60
(binder resin; reversible thermal recording sheet compn. contg.
leuco dye with smaller particle size than that of
coloring-decoloring agent)

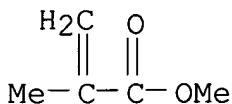
RN 9011-14-7 HCA

CMN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
INDEX NAME)

CM 1

CRN 80-62-6

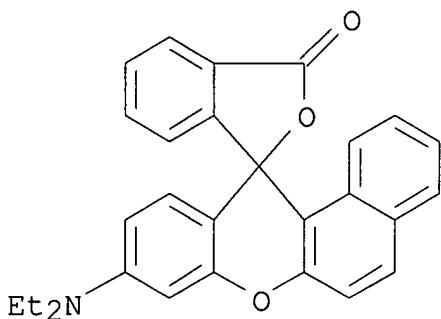
CMF C5 H8 O2



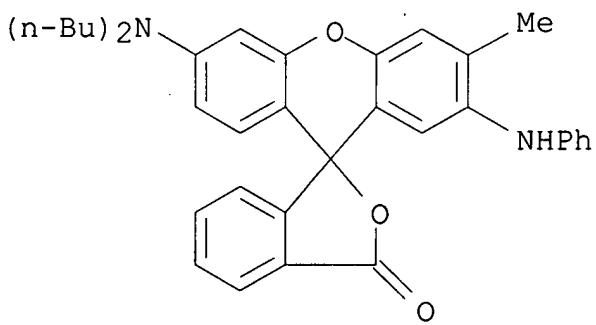
IT 26628-47-7 89331-94-2

(leuco dye; reversible thermal recording sheet compn. contg.
 leuco dye with smaller particle size than that of
 coloring-decoloring agent)

RN 26628-47-7 HCA

CN Spiro[12H-benzo[a]xanthene-12,1'(3'H)-isobenzofuran]-3'-one,
 9-(diethylamino)- (9CI) (CA INDEX NAME)

RN 89331-94-2 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 6'-(dibutylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)

IC ICM B41M005-26

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

Section cross-reference(s): 25, 38

IT 9003-22-9, VYHH 9011-14-7, Dianal BR 60

(binder resin; reversible thermal recording sheet compn. contg.)

leuco dye with smaller particle size than that of
coloring-decoloring agent)

IT 1552-42-7 **26628-47-7 89331-94-2**

(leuco dye; reversible thermal recording sheet compn. contg.
leuco dye with smaller particle size than that of
coloring-decoloring agent)

L66 ANSWER 15 OF 21 HCA COPYRIGHT 2005 ACS on STN

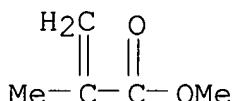
119:169749 Studies of operating characteristics of solid-state polymeric
laser media activated with dyes. Paramonov, Yu. M.; Bermas, T. B.;
Murav'eva, T. M.; Kostenich, Yu. V.; Lan'kova, S. M.
(UkrNIIPlastmass, Donetsk, Ukraine). Kvantovaya Elektronika (Kiev),
42, 91-7 (Russian) **1992**. CODEN: KVELA6. ISSN: 0368-7155.

AB Methodol. and app. was developed for detg. the durability under
laser radiation of **optical media**. Studies were
conducted for various types of host media (including polymers) in
the unactivated state and following coloring by laser dyes. The
introduction of dyes into polymers does not degrade its durability
under laser radiation, and can even enhance it. The phys. and chem.
modification of polymers does not change their durability under
laser radiation. Methods for enhancement of their durability are
described.

IT **80-62-6D**, Methylmethacrylate, polymers
(laser damage resistance of)

RN 80-62-6 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



IT **91757-00-5**

(laser damage resistance of polymers contg.)

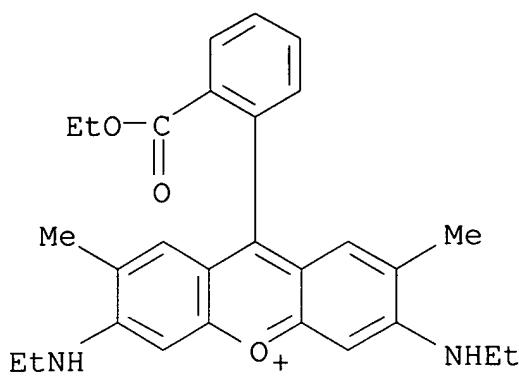
RN 91757-00-5 HCA

CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-
dimethyl-, salt with 2-methylpropanoic acid (1:1) (9CI) (CA INDEX
NAME)

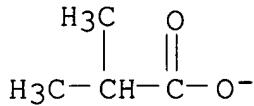
CM 1

CRN 47724-48-1

CMF C28 H31 N2 O3

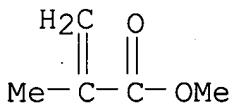


CM 2

CRN 5711-69-3
CMF C4 H7 O2

IT **9011-14-7, Polymethylmethacrylate**
 (laser damage resistance of undoped and dye-doped)
 RN 9011-14-7 HCA
 CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
 INDEX NAME)

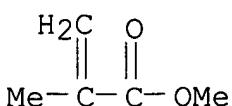
CM 1

CRN 80-62-6
CMF C5 H8 O2

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 36
 ST dye dopant polymer laser damage; **PMMA** dye dopant laser
 damage; **polymethylmethacrylate** dye dopant laser damage
 IT 79-41-4D, Methacrylic acid, polymers **80-62-6D**,
 Methylmethacrylate, polymers **80-62-6D**, siloxane copolymer

25067-05-4, Glycidylmethacrylate homopolymer 150121-35-0
 (laser damage resistance of)
 IT 12627-64-4, Rhodamine S 26078-25-1 27425-55-4, Coumarin 7
 53518-15-3, Coumarin 151 55804-70-1, Coumarin 307 76416-54-1,
 Oxazine 17 **91757-00-5**
 (laser damage resistance of polymers contg.)
 IT **9011-14-7, Polymethylmethacrylate** 25086-15-1,
 Methacrylic acid-methylmethacrylate copolymer
 (laser damage resistance of undoped and dye-doped)

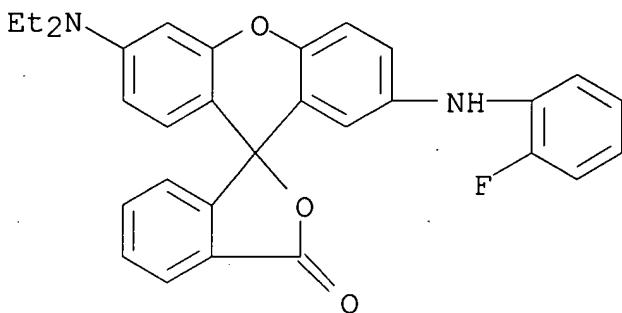
L66 ANSWER 16 OF 21 HCA COPYRIGHT 2005 ACS on STN
 119:59781 Heat-sensitive magnetic composite recording materials.
 Nakazawa, Atsushi; Harunaga, Rie (Oji Paper Co, Japan). Jpn. Kokai
 Tokkyo Koho JP 04366683 A2 **19921218** Heisei, 10 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-142069 19910613.
 AB The title materials comprise a support with coatings of a
 heat-sensitive layer contg. a dye precursor and color developer
 .gtoreq.1 of which has a solv. in toluene at ordinary temp. of
 .1toreq.1 wt.% and .gtoreq.1 toluene-sol. polymer as a binder, a
 protective layer contg. .gtoreq.1 selected from water-sol. and
 hydrophobic polymers, a pigment, and a crosslinking agent, and an
 overcoat layer based on an UV-curing resin on 1 side, and a magnetic
 recording layer contg. a magnetic powder and a binder and an Al
 layer contg. an Al powder and a binder on the other side. The
 material show high whiteness and good resistance to water, heat, and
 moisture and enable to record the both of magnetic and visible
informations with excellent **storage** stability.
 Thus, a PET film was coated with a compn. contg. Ba ferrite, vinyl
 chloride-vinyl acetate copolymer, polyurethane, and with a compn.
 contg. Al paste and polyurethane on 1 side, and coated with a compn.
 contg. 2-(2-fluorophenylamino)-6-diethylaminofluoran,
 4-hydroxy-4-isopropoxydiphenylsulfone, BR-83 (toluene soln. of Me
 methacrylate copolymer), and toluene, a compn. contg.
 carboxy-modified poly(vinyl alc.), polyamide resin, and kaolin, and
 with Seika Beam PPC-D-9 (UV-curing vehicle) (which was cured after
 coating) successively on the other side to give a heat-sensitive,
 magnetic recording sheet.
 IT **80-62-6D**, Methyl methacrylate, copolymer
 (binder, thermal recording material using, on magnetic recording
 sheet)
 RN 80-62-6 HCA
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



IT **87454-84-0 107040-95-9**

(color-former, thermal recording material using, on magnetic recording sheet)

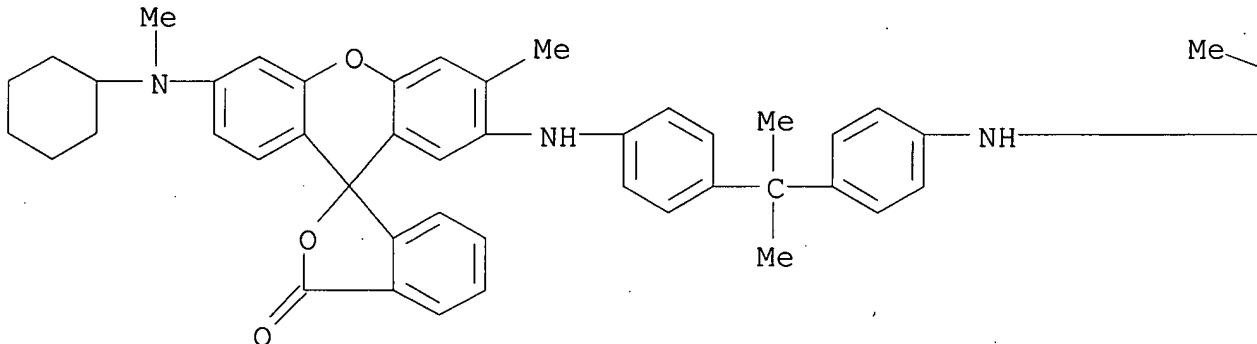
RN 87454-84-0 HCA

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one,
6'-(diethylamino)-2'-(2-fluorophenyl)amino]- (9CI) (CA INDEX NAME)

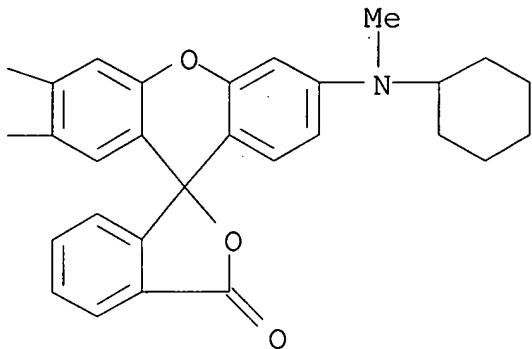
RN 107040-95-9 HCA

CN Spiro[isobenzofuran-1(3H),9'-(9H)xanthen]-3-one,
2',2''''-[(1-methylethylidene)bis(4,1-phenyleneimino)]bis[6'-(cyclohexylmethylamino)-3'-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM B41M005-26

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 77

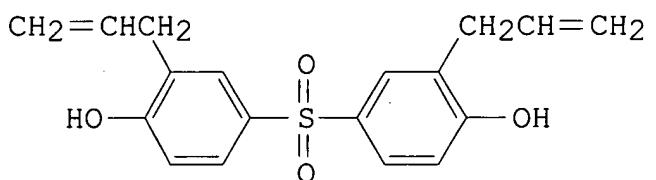
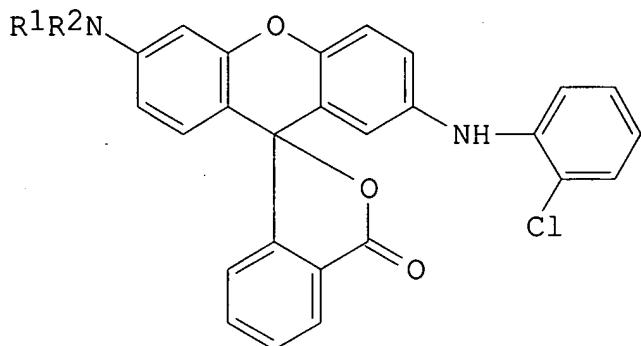
IT **80-62-6D**, Methyl methacrylate, copolymer
(binder, thermal recording material using, on magnetic recording
sheet)IT **87454-84-0 107040-95-9**
(color-former, thermal recording material using, on magnetic
recording sheet)

L66 ANSWER 17 OF 21 HCA COPYRIGHT 2005 ACS on STN

113:88277 Heat-sensitive **recording medium**.

Miyamoto, Kenichi; Mori, Takahiro; Azuma, Kensaku; Aoyama, Koichi
(Tomoegawa Paper Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
01278388 A2 **19891108** Heisei, 11 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1988-107543 19880502.

GI



AB In a heat-sensitive **recording medium** comprising a support and successively deposited heat-sensitive coloring, 1st protective, and 3rd protective layers, the heat-sensitive coloring layer contains leuco dye, I [R1, R2 = alkyl] and color developer II, the heat-sensitive layer and the 1st protective layer contain an aq. polyesterpolyurethane resin and the 2nd protective layer contains an acrylic resin and/or a UV-hardenable resin. The **recording medium** is useful in making passes and tickets for public transportation, etc.

IT 9011-14-7, Thermolac M 2000
(thermosensitive **recording medium** protective layer contg.)

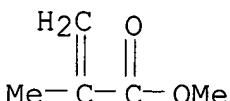
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

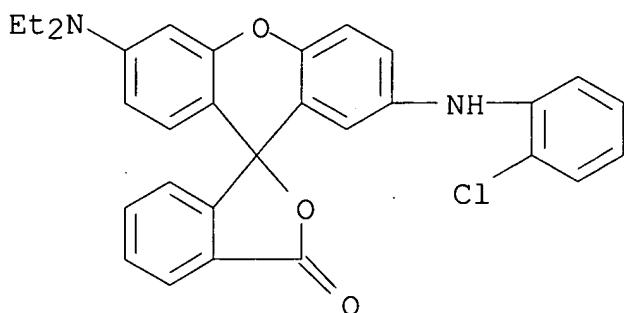
CMF C5 H8 O2



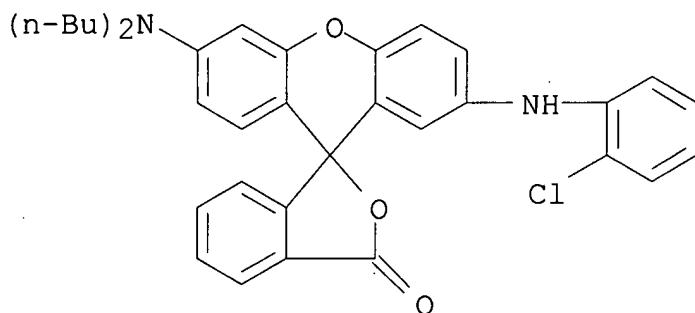
IT 68506-98-9, 3-(Diethylamino)-7-(o-chloroanilino)fluoran

82137-81-3(thermosensitive **recording medium** using)

RN 68506-98-9 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 2'-(2-chlorophenyl)amino]-6'-(diethylamino)- (9CI) (CA INDEX NAME)



RN 82137-81-3 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 2'-(2-chlorophenyl)amino]-6'-(dibutylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-18
 ICS B41M005-18
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 41481-66-7, Bis-(4-hydroxy-3-allylphenyl)sulfone
 (color developer, thermo-sensitive **recording medium** using)
 IT 103364-02-9 128544-15-0
 (heat-sensitive **recording medium** using protective layer of)
 IT 9011-14-7, Thermolac M 2000 62886-89-9, Aronix M 8060
 111214-34-7, Hydran AP 40 122878-75-5, Hydran HW 350
 (thermosensitive **recording medium** protective layer contg.)
 IT 68506-98-9, 3-(Diethylamino)-7-(o-chloroanilino)fluoran
82137-81-3

(thermosensitive **recording medium** using)

L66 ANSWER 18 OF 21 HCA COPYRIGHT 2005 ACS on STN

110:85710 Thermal **recording media** with

heat-sensitive layer containing leuco dye and particles made from color developer and binder. Saito, Tsunayoshi (Tokyo Magnetic Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63168384 A2 19880712 Showa, 5 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1987-757 19870106.

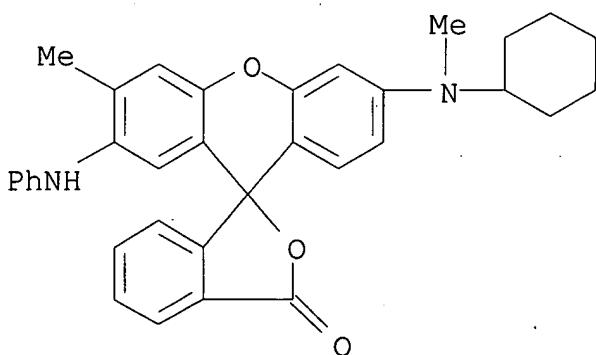
AB Thermal **recording media** have a heat-sensitive layer obtained by binding a leuco dye and fine particles of a color developer for the dye, which are prep'd. by dispersing or dissolving the color developer in a binder resin, with a binder on a substrate. The **recording media** provide very stable images, and the coloration of the background is prevented. Thus, a mixt. of TG-SA (color developer) and S-Lec A (vinyl chloride resin) (6:4 wt. ratio) was made into particles (1-2 .mu. particle size), and a polyester sheet with a magnetic layer on the back side was coated with a compn. contg. the particles, Dianal BR-50 [**poly(Me methacrylate)**], and PSD-150 (leuco dye), overcoated with a compn. contg. Dianal BR-50 and Micropearle (starch particle), and then cut into a card. Thermal recording was carried out with the card to give high-quality images showing good moisture resistance, and the coloration of the background under a high moisture condition was very little.

IT 55250-84-5, PSD-150

(colorant, for thermal printing material)

RN 55250-84-5 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 6'-(cyclohexylmethylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-18

ICS B41J031-00

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and

ST Other Reprographic Processes)
 thermal **recording medium** leuco dye; color
 developer particle **recording medium**
 IT **55250-84-5**, PSD-150
 (colorant, for thermal printing material)

L66 ANSWER 19 OF 21 HCA COPYRIGHT 2005 ACS on STN
 107:208936 Image forming method and transfer **recording**
medium therefor. Tamura, Yasuyuki; Kaneko, Shuzo (Canon K.
 K., Japan). Eur. Pat. Appl. EP 205083 A2 **19861217**, 127
 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT, LI, NL.
 (English). CODEN: EPXXDW. APPLICATION: EP 1986-107540 19860603.
 PRIORITY: JP 1985-120080 19850603; JP 1985-120081 19850603; JP
 1985-131411 19850617; JP 1985-134831 19850620; JP 1985-150597
 19850709; JP 1985-199926 19850910; JP 1985-250884 19851111.

AB A transfer recording process is described in which a high-quality image can be formed on a plain paper having a low surface smoothness. In the process, which can be used in printers, copying machines, facsimile machines, and the like, plural kinds of energies, such as heat, light, and pressure, are applied to a transfer recording layer with .gtoreq.1 energy applied imagewise to produce a transferable portion or latent image portion in the layer which is then transferred to a receptor medium. The process is capable of producing multicolor images through a single transfer step. A polyimide film was coated with a compn. contg. poly(4,4'-isopropylidenediphenylene-1,1,3-trimethyl-3-phenylindane-5,4'-dicarboxylate : p,p'-dihydroxybiphenyl azelate) (25:75), tris(acryloylhexyl) 1,3,5-benzenecarboxylate, benzophenone, Michlers ketone, hydroquine, and C black, dried, recorded upon using a thermal recording head in the presence of light, laminated with plain paper, and run through a heat roller and a pinch roller to give a clear and high quality transfer image.

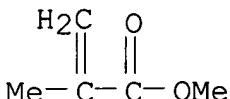
IT **9011-14-7**, Elvacite 2041 **29512-49-0**
 (photosensitive compns. contg., for thermal-transfer recording)

RN 9011-14-7 HCA

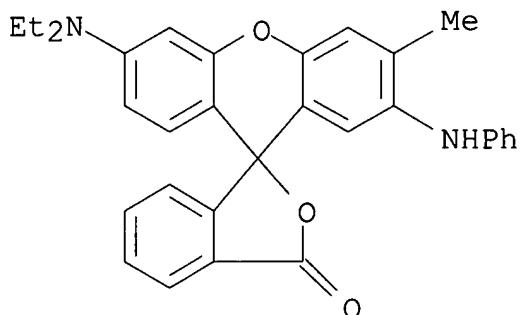
CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



RN 29512-49-0 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-(9H)xanthen]-3-one,
 6'-(diethylamino)-3'-methyl-2'-(phenylamino)- (9CI) (CA INDEX NAME)



IC ICM B41M005-26
 ICS B41J003-20; G03C005-04; B41M005-10; B41M005-12
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 84-65-1, Anthraquinone 86-39-5, 2-Chlorothioxanthone 90-94-8,
 Michler's ketone 90-98-2 119-53-9, Benzoin 119-61-9,
 Benzophenone, uses and miscellaneous 123-31-9, Hydroquinone, uses
 and miscellaneous 1328-53-6, Phthalocyanine Green 1338-23-4,
 Methyl ethyl ketone peroxide 1628-58-6 3568-36-3 5281-04-9,
 Brilliant Carmine 6B 6358-85-6, Benzidine Yellow 7576-65-0,
 Diaresin Yellow H.G. 9003-63-8, Poly(butyl methacrylate)
9011-14-7, Elvacite 2041 10287-53-3, Ethyl
 p-dimethylaminobenzoate 24968-99-8 **29512-49-0**
 33943-20-3 40220-08-4 71868-10-5, Irgacure 907 73214-79-6
 77473-08-6 80619-54-1, Kayaset Blue 136 81746-36-3 87186-87-6
 99638-49-0 110586-36-2 110604-04-1 110616-99-4 110765-50-9
 (photosensitive compns. contg., for thermal-transfer recording)

L66 ANSWER 20 OF 21 HCA COPYRIGHT 2005 ACS on STN
 106:129451 Using metal azide **recording media** with
 laser. West, John L.; Russell, James T. (Digital Recording Corp.,
 USA). U.S. US 4622284 A **19861111**, 8 pp. (English).
 CODEN: USXXAM. APPLICATION: US 1984-585175 19840301.

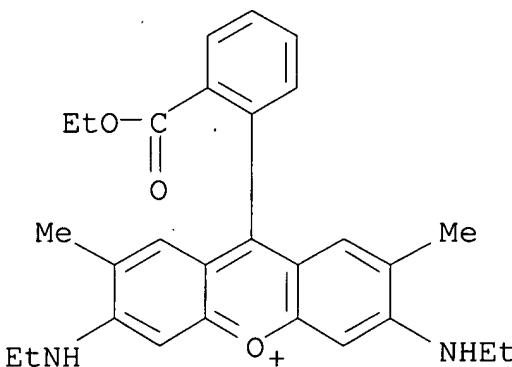
AB A laser-sensitive **optical recording** material
 contains a laser radiation-absorbing dye and a metal azide dispersed
 in an inert binder. Low to moderate pulses of laser light cause the
 azide particles to react exothermally to create voids in the
 recording material which can be read by an optical readout device.
 The metal azide reacts exothermally when ignited, to amplify the
 energy of an incident radiation beam. Specifically, at the location
 where the laser beam strikes the recording material, the exothermal
 reaction of the metal azide causes heat build up and formation of a
 visible mark or spot in the recording material. Cu(II), Pb, and Ag

azides are most suited since they react highly exothermally and yet can easily be incorporated in the recording material. Thus, a **PMMA** sheet was washed with MeOH, coated with an aq. soln. contg. gelatin, Cu(II) azide, NH₄OH, and HCHO, dried, then with a dye (IR 125) soln. in MeOH, dried, and deposited with a Si oxide insulating subbing layer, an Al reflective layer, and a Si oxide protective layer to give a recording material which was recorded upon by an incident laser beam through the **PMMA**.

IT 989-38-8, Rhodamine 6G **16423-68-0**, Erythrosine B
(laser **optical recording** materials contg.
metal azide and)

RN 989-38-8 HCA

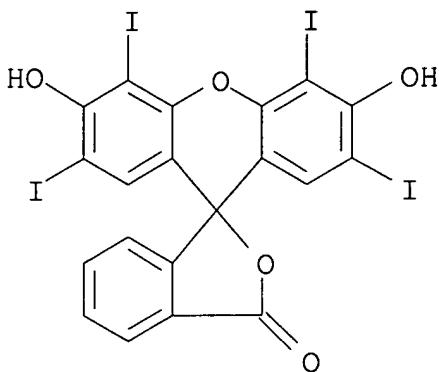
CN Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

RN 16423-68-0 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
3',6'-dihydroxy-2',4',5',7'-tetraiodo-, disodium salt (9CI) (CA INDEX NAME)



●2 Na

IT 9011-14-7, Poly(methyl methacrylate)

(protective layer, for laser **optical recording** materials contg. metal azide and laser-absorbing dye)

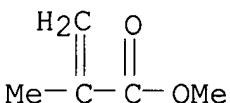
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



IC ICM G03C005-16

ICS G01D015-14; G01D015-34

INCL 430290000

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Azides

(laser **optical recording** materials contg. laser-absorbing dye and)

IT Gelatins, uses and miscellaneous

(laser **optical recording** materials contg. metal azide and laser-absorbing dye and)

IT Rubber, silicone, uses and miscellaneous

(protective layer, for laser **optical recording**
materials contg. metal azide and laser-absorbing dye)

IT **Recording** materials
(**optical**, contg. metal azide and laser-absorbing dye)

IT 13424-46-9, Lead azide 13863-88-2, Silver azide 14215-30-6,
Cupric azide
(laser **optical recording** materials contg.
laser-absorbing dye and)

IT 85-86-9, Sudan III **989-38-8**, Rhodamine 6G 3599-32-4, IR
125 11121-48-5, Rose Bengal **16423-68-0**, Erythrosine B
(laser **optical recording** materials contg.
metal azide and)

IT 9002-89-5, Poly(vinyl alcohol) **9011-14-7**, Poly(
methyl methacrylate) 11126-22-0, Silicon oxide
(protective layer, for laser **optical recording**
materials contg. metal azide and laser-absorbing dye)

L66 ANSWER 21 OF 21 HCA COPYRIGHT 2005 ACS on STN
104:26802 Recording material. (Fuji Photo Film Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 60119552 A2 **19850627** Showa, 12 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1983-227437 19831201.

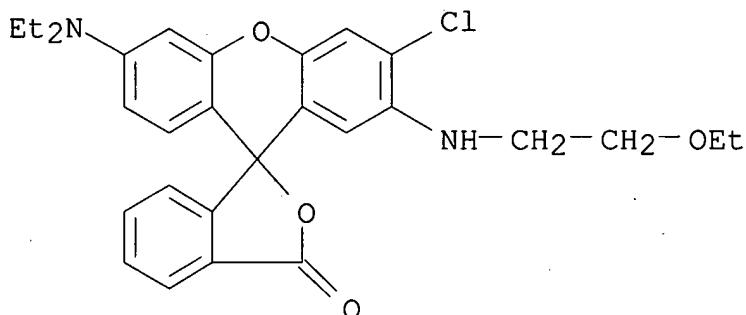
AB A photosensitive and heat-sensitive recording material has, on 1 side of the base, a polymerizable vinylic monomer and/or prepolymer, a photoinitiator, and a dye (or dye precursor activated by heating to give a dye), which is bleachable by the polymerizable monomer or prepolymer and, in the material, the monomer (or prepolymer) and the dye (or dye precursor) are sepd. by a barrier. The material provides, esp. by photopolyrn., color images having a good reproducibility and signal-to-noise-ratio, by a dry process. Thus, a poly(ethylene terephthalate) film was coated with a 1:2 mixt. of the following 2 dispersions to form a dye precursor layer.
7'-Ethoxyethylamino-6'-chloro-3'-diethylaminofluoran 10, 10% gelatin soln. 10, 5% Na p-dodecylbenzenesulfonate (I) 0.2, and H₂O 40 g, and 2-ethyl-1,1'-bis(4-hydroxyphenyl)hexane 10, 10% gelatin 10, 5% I 0.2, and H₂O 40 g. A 5 .mu.m barrier layer was formed by coating a CH₂Cl₂ soln. of **poly(Me methacrylate)** thereon. The photopolymer layer (5 .mu.m) was formed by coating a compn. prep'd. by dispersing pentaerythritol tetraacrylate 1, CH₂Cl₂ 1, and dimedone 0.1 g in an aq. soln. contg. 10% poly(vinyl alc.) 10, 5% I 1, and methylene blue 0.005 g. The obtained material was sensitometrically exposed to filtered red light (30 s at 50,000 lx, by halogen lamp) and heated on a 120.degree. hot plate for 30 s. The max. and min. d. of the black image were 1.5 and 0.1, resp. Exposure to room-light for 20 h had no effect on the image. Prestorage of the unexposed material for 60 days also had no effect.

IT **76579-17-4**

(color photoimaging compns. contg. photopolymerizable top layer and underlayer contg. heat-activatable bleachable dye precursor

from)

RN 76579-17-4 HCA
 CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one,
 3'-chloro-6'-(diethylamino)-2'-(2-ethoxyethyl)amino]- (9CI) (CA
 INDEX NAME)



IT 9011-14-7

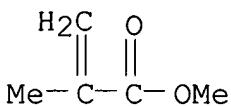
(color photoimaging compns. with photopolymerizable top layer and
 underlayer contg. bleachable dye or heat-activatable bleachable
 dye precursor and barrier layer from)

RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
 INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



IC ICM G03C005-00

ICS B41M005-00; G03C001-00

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)IT **Recording** materials

(**optical**, color, with photopolymerizable top-layer and
 underlayer contg. bleachable dye for heat-activatable bleachable
 dye precursor)

IT 76579-17-4

(color photoimaging compns. contg. photopolymerizable top layer
 and underlayer contg. heat-activatable bleachable dye precursor
 from)

IT 9011-14-7

(color photoimaging compns. with photopolymerizable top layer and underlayer contg. bleachable dye or heat-activatable bleachable dye precursor and barrier layer from)

=> d his 167-

FILE 'HCA' ENTERED AT 17:13:03 ON 24 JUN 2005
L67 16 S L50 AND (L17 OR L18)

=> d 167 1-16 cbib abs hitstr hitind

L67 ANSWER 1 OF 16 HCA COPYRIGHT 2005 ACS on STN
142:325470 Femtosecond laser application for high capacity
optical data storage. Hong, M. H.; Luk'yanchuk,
B.; Huang, S. M.; Ong, T. S.; Van, L. H.; Chong, T. C. (Data Storage
Institute, Singapore, 117608, Singapore). Applied Physics A:
Materials Science & Processing, A79(4-6), 791-794 (English) 2004.
CODEN: APAMFC. ISSN: 0947-8396. Publisher: Springer-Verlag.

AB A femtosecond (fs) laser application for multi-layer **optical recording** was studied. Information patterns at different layer depths were written inside a transparent glass substrate due to micro-void formation by fs laser ablation, which causes re-distribution in glass materials and a refractive index modification. The **information** bits **recorded** in a single layer can be retrieved clearly without interference from the neighboring layers. A fs laser irradn. of a transparent polymer matrix (doped with fluorescent materials for use as low-cost **recording media**) is also studied. A fs laser induced photo-chem. reaction changes the chem. properties of the fluorescent materials and **records information** bits inside the matrix. With an ultra-fast laser as a new light source, 3-dimensional **optical recording** can be available for high capacity data storage up to 1 TB per disk.

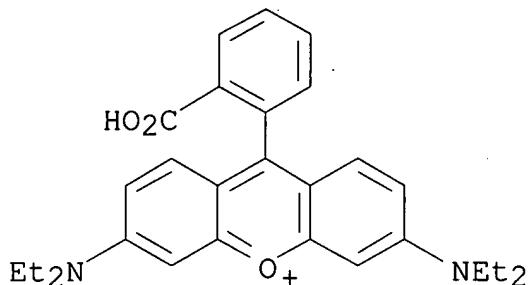
IT 81-88-9, Rhodamine B 9011-14-7

, **PMMA**

(IR spectra of system contg.; femtosecond laser application for high capacity **optical data storage**)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

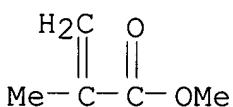
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST laser application capacity **optical data storage**

IT Glass substrates

Lasers

Optical recording

(femtosecond laser application for high capacity **optical data storage**)

IT **Optical recording**

(laser; femtosecond laser application for high capacity **optical data storage**)

IT **81-88-9, Rhodamine B** 7440-57-5, Gold, properties **9011-14-7**, **PMMA** 16065-91-1, Gold(3+), properties

(IR spectra of system contg.; femtosecond laser application for high capacity **optical data storage**)

IT 7440-32-6, Titanium, properties

(femtosecond laser application for high capacity **optical**

data **storage**)

IT 1344-28-1, Alumina, uses
(sapphire laser; femtosecond laser application for high capacity
optical data storage)

L67 ANSWER 2 OF 16 HCA COPYRIGHT 2005 ACS on STN

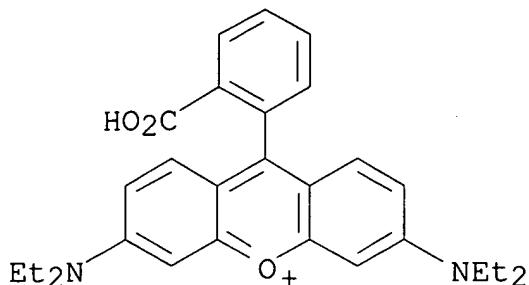
140:49889 Unique functional micro/nano-structures created by femtosecond laser irradiation. Hong, M. H.; Huang, S. M.; Wang, W. J.; Tiaw, K. S.; Teoh, S. H.; Luk'yanchuk, B.; Chong, T. C. (Data Storage Institute, Singapore, 117608, Singapore). Materials Research Society Symposium Proceedings, 780(Advanced Optical Processing of Materials), 47-57 (English) 2003. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.

AB Femtosecond (fs) laser application in 3-dimensional (3D) **optical recording** is introduced. The laser irradn. on transparent glass and polymer matrix doped with fluorescent material is carried out, which changes the phys. or chem. properties of the **recording media** and **records information** bits. With the change of the focusing positions inside the transparent substrates, 3-dimensional **optical recording** can be available for ultrahigh capacity data storage. Feasibility on fs laser drilling of poly-caprolactone (PCL) thin films for tissue engineering is studied. Precisely defined micro-hole arrays can be formed on the sample surfaces. Hydrophilic property of the processed samples is much improved, which provides good conditions for tissue cells to anchor on the man-made skin. Fs laser applications to form nanostructures on substrate surfaces are studied. Fs laser combination with near-field scanning optical microscopy (NSOM) to induce surface property modification in the sub 50-nm under NSOM tip and nanoparticles is also discussed.

IT 81-88-9, Rhodamine B
(**optical recording** by femtosecond laser
irradn.)

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

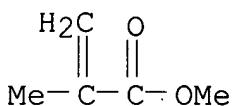
IT 9011-14-7, **Polymethylmethacrylate**
 (optical recording by femtosecond laser
 irradn.)

RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
 INDEX NAME).

CM 1

CRN 80-62-6
 CMF C5 H8 O2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 9, 74

ST femtosecond laser irradn **optical recording** dye
 gold **PMMA**; drilling laser femtosecond pulse
 polycaprolactone film

IT Fluorescence quenching
 Nanoparticles
 (optical recording by femtosecond laser
 irradn.)

IT **Optical recording**
 (unique functional micro/nano-structures created by femtosecond
 laser irradn.)

IT **81-88-9, Rhodamine B** 16065-91-1, Gold
 3+, properties 16903-35-8, Tetrachloroauric acid

(optical recording by femtosecond laser
irradn.)

IT **9011-14-7, Polymethylmethacrylate**
(optical recording by femtosecond laser
irradn.)

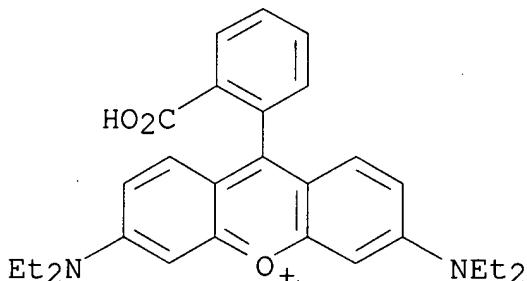
L67 ANSWER 3 OF 16 HCA COPYRIGHT 2005 ACS on STN
135:233616 Laser devices having **optical** scattering
medium. Ootomo, Akira; Yokoyama, Akiyoshi (Tsushin Sogo
Kenkyusho, Japan). Jpn. Kokai Tokkyo Koho JP 2001257400 A2
20010921, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2000-67614 20000310.

AB The devices comprise an **optical** scattering **medium**
having a scattering cross section < 10-13 cm², a d. > 1012 cm⁻³ and
an optical energy loss due the scattering 0.5-50 dB/cm.

IT **81-88-9, Rhodamine B 81-88-9D,**
Rhodamine B, reaction with polymethylmethacrylate
9011-14-7, PMMA
(laser device which uses optical diffusion body)

RN 81-88-9 HCA

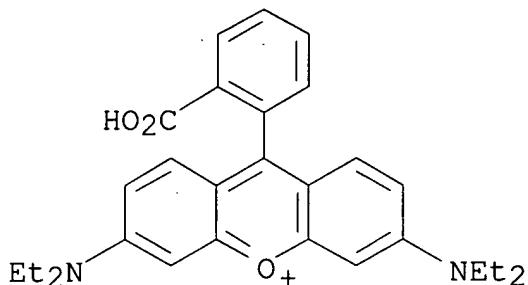
CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

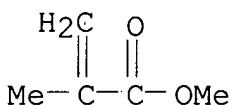
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



IC ICM H01S003-08

ICS H01S003-06; H01S003-17

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST laser **PMMA** Rhodamine optical scattering

IT **81-88-9, Rhodamine B 81-88-9D,**

Rhodamine B, reaction with polymethylmethacrylate

9011-14-7, PMMA 12005-21-9, YAG

(laser device which uses optical diffusion body)

L67 ANSWER 4 OF 16 HCA COPYRIGHT 2005 ACS on STN

131:304921 Lasing of a microsphere in dye solution. Fujiwara, Hideki; Sasaki, Keiji (Research Institute for Electronic Science, Hokkaido University, Sapporo, 060-0812, Japan). Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers, 38(9A), 5101-5104 (English) 1999. CODEN: JAPNDE. ISSN: 0021-4922. Publisher: Japanese Journal of Applied Physics.

AB Lasing of micrometer-sized, nonluminescent, spherical particles

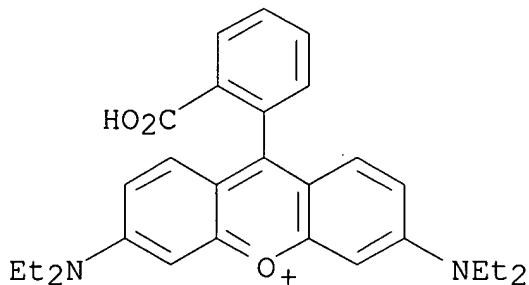
dispersed in an aq. soln. of **rhodamine B** was demonstrated. The microspherical resonance field is composed of an evanescent field surrounding the sphere as well as a propagation component within the particle, so that the dye soln. just outside of the spherical surface can function as a gain **medium** within an **optical** cavity. Periodical ripple structures were obsd. in the emission spectra, which agreed well with the Mie scattering theory. The lasing threshold is 7 mW for a 28. μ m. glass microsphere in 10-2 mol/l **rhodamine B** soln. The decrease in the lasing emission intensity caused by photodegrdn. can be suppressed by thermal diffusion of the dye mols. in the liq. soln.

IT 81-88-9, Rhodamine B

(lasing of **PMMA** or glass microsphere in dye soln.)

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
(9CI) (CA INDEX NAME)



● Cl⁻

IT 9011-14-7, PMMA

(microspheres; lasing of **PMMA** or glass microsphere in dye soln.)

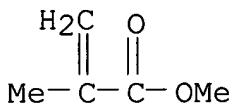
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

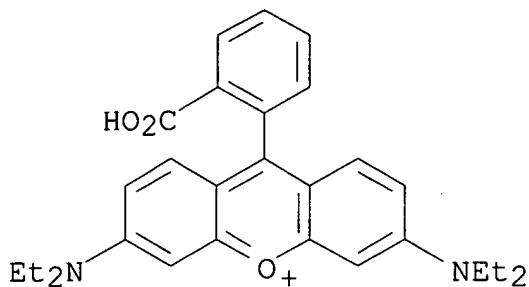
CMF C5 H8 O2



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST lasing **PMMA** glass microsphere dye soln; resonance laser evanescent field photobleaching
 IT Lasers
 Luminescence
 (lasing of **PMMA** or glass microsphere in dye soln.)
 IT Glass microspheres
 (lasing of **PMMA** or glass microsphere in dye soln.)
 IT **81-88-9, Rhodamine B**
 (lasing of **PMMA** or glass microsphere in dye soln.)
 IT **9011-14-7, PMMA**
 (microspheres; lasing of **PMMA** or glass microsphere in dye soln.)

L67 ANSWER 5 OF 16 HCA COPYRIGHT 2005 ACS on STN
 131:108274 Advances in 3D two-photon **optical storage** devices. Dvornikov, A. S.; Cokgor, I.; McCormick, F. B.; Esener, S. E.; Rentzepis, P. M. (Department of Chemistry, University of California, Irvine, CA, 92697, USA). Biennial IEEE International Nonvolatile Memory Technology Conference, Proceedings, 7th, Albuquerque, June 22-24, 1998, 68-71. Institute of Electrical and Electronics Engineers: New York, N. Y. (English) 1998. CODEN: 67SAAB.
 AB A review with 8 refs. The materials, method and for **storing** and accessing **information** in 3-dimensional by two-photon absorption are described. The materials used have very high two photon absorption cross-section and near unit quantum efficiency for fluorescence. The storage devices are composed of org. mols., uniformly dispersed in polymer matrixes. The binary codes zero and one correspond to two different structures of the same mol., induced by simultaneous absorption of two photons. The writing and accessing of the information can be performed either bit by bit or in a 2-dimensional multibit plane format. Fatigue studies suggest that these materials are suitable for 3-dimensional storage devices. Automated recording and readout 3-dimensional systems were constructed and characterized. Channel error sources were identified, and a custom spatial bit-error-rate test was developed.
 IT **81-88-9, Rhodamine B 9011-14-7**, **PMMA**
 (three-dimensional two-photon **optical storage** devices)

RN 81-88-9 HCA
 CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride
 (9CI) (CA INDEX NAME)

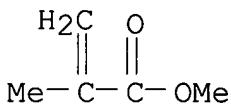


● Cl⁻

RN 9011-14-7 HCA
 CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
 CMF C5 H8 O2



CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74
 ST **optical storage** two photon three dimensional review; photochromic optical memory three dimensional review
 IT Memory devices
 (ROM (read only), optical; three-dimensional two-photon
optical storage devices)
 IT Spiro compounds
 Spiro compounds
 (pyrans; three-dimensional two-photon **optical storage** devices)
 IT Heterocyclic compounds
 Heterocyclic compounds
 (spiropyrans; three-dimensional two-photon **optical**

storage devices)

IT Fluorescence

Optical recording

 Photochromism

 Two-photon absorption

 (three-dimensional two-photon **optical storage** devices)

IT **81-88-9, Rhodamine B** 120-12-7D,
 Anthracene, deriv., properties 509-34-2, **Rhodamine B** base **9011-14-7, PMMA** 16331-97-8
 101327-84-8, 1-Nitro-2-naphthaldehyde 116778-99-5,
 2-Naphthalenecarboxylic acid, 1-nitroso-
 (three-dimensional two-photon **optical storage** devices)

L67 ANSWER 6 OF 16 HCA COPYRIGHT 2005 ACS on STN
 128:134302 Organic materials for real-time holographic recording.
 Weiss, V.; Friesem, A. A.; Krongauz, V. A. (Physics of Complex Systems, Weizmann Institute of Science, Rehovot, 76100, Israel). Journal of Imaging Science and Technology, 41(4), 371-382 (English) 1997. CODEN: JIMTE6. ISSN: 1062-3701. Publisher: Society for Imaging Science and Technology.

AB Photoactive org. layers, such as photochromic polymers and photopolymers, are investigated for real-time and in-situ holog. recording. The results with photochromic polymers contg. spiropyran and spirooxazine dyes revealed that variations in the UV beam excitation and visible recording beam procedures significantly changed the exposure sensitivity and diffraction efficiency. These effects were exploited for all-optical modulation of the holog. gratings and explained by the photochem. and thermal transformations between photochromic stereoisomers. Copolymers of the photochromic spiropyrans were investigated for **optical recording** with IR laser radiation at 10.5 and 10.6 .mu.m. Although the recording primarily occurs by thermal bleaching, some nonthermal IR processes are also involved. Holog. recording in photopolymer layers, based on acrylamide monomers dissolved in poly(vinyl alc.), is influenced by chem. additives. Specifically, a superadditive sensitization effect of diphenyliodonium chloride together with triethanolamine significantly increased the exposure sensitivities at 514 nm, by a factor of more than 3 (to about 15 mJ/cm²). Several formulations produce large enough refractive index modulations so that very high diffraction efficiencies (DE > 90%) are obtained. For certain conditions, under highly asym. recording angles, the diffraction efficiency is significantly reduced, and was found to originate from fringe bending due to nonlinear shrinkage. The introduction of crosslinking and gelling agents stabilize the formed grating structures against dimensional distortions.

IT **9011-14-7, PMMA**

(holog. recording mechanism in polymers contg. spiropyran and spirooxazine dyes)

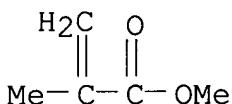
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2

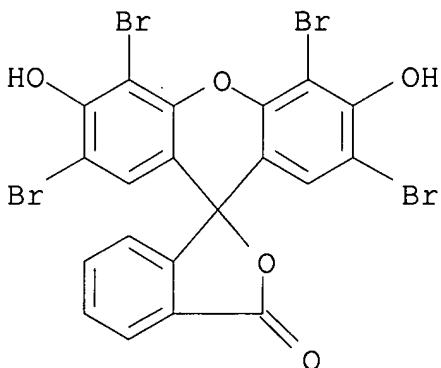


IT 17372-87-1, Eosin Y

(sensitizer; holog. recording in photopolymer layers based on acrylamide monomers dissolved in poly(vinyl alc.))

RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA
INDEX NAME)



● 2 Na

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **9011-14-7, PMMA** 16111-07-2 27333-47-7
101515-24-6

(holog. recording mechanism in polymers contg. spiropyran and spirooxazine dyes)

IT 17372-87-1, Eosin Y

(sensitizer; holog. recording in photopolymer layers based on acrylamide monomers dissolved in poly(vinyl alc.))

L67 ANSWER 7 OF 16 HCA COPYRIGHT 2005 ACS on STN

126:24766 Non-linear optical characterization of polymer dye composites and their characterization as holographic **recording media**. Tripathi, A.; Roy, A.; Tripathi, A. K.; Pillai, P. K. C.; Goel, T. C.; Singh, K. (Dep. Physics, Indian Inst. Technol., New Delhi, 110 016, India). Journal of Materials Science Letters, 15(18), 1577-1579 (English) 1996. CODEN: JMSLD5. ISSN: 0261-8028. Publisher: Chapman & Hall.

AB Polymer-xanthene dye composite films using **PMMA** as a host polymer were characterized for holog. recording. This material provided long erasure times (.apprx.18 min) at high intensity read-out beam (60 mW unexpanded laser beam), and showed resistance to aging at high intensity laser light for long times. Diffraction intensity of the recorded holograms was .apprx.0.013%.

IT **9011-14-7, PMMA 17372-87-1, Eosin Y**
(non-linear optical characterization of polymer-xanthene dye composite for holog. recording)

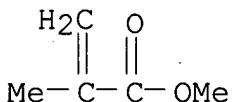
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

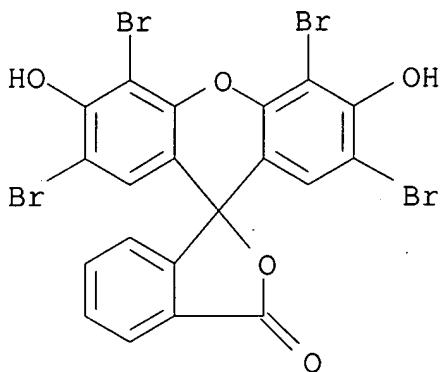
CRN 80-62-6

CMF C5 H8 O2



RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)



●2 Na

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **PMMA** xanthene dye composite holog recording

IT 989-38-8, Rhodamine 6G **9011-14-7**, **PMMA**

16423-68-0, Erythrosin B **17372-87-1**, Eosin Y

(non-linear optical characterization of polymer-xanthene dye composite for holog. recording)

L67 ANSWER 8 OF 16 HCA COPYRIGHT 2005 ACS on STN

122:208948 Influence of **medium's optical** properties

on laser induced fluorescence measurements: experimental study on solutions and a gel model of biological significance. Papazoglou, Theodore G.; Liu, W. Q.; Manolopoulos, Athanassios (Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, 711 10, Greece). Proceedings of SPIE-The International Society for Optical Engineering, 2324 (Optical Biopsy and Fluorescence Spectroscopy and Imaging), 322-8 (English) 1994. CODEN: PSISDG. ISSN: 0277-786X.

AB Since it is known that tissue scatters light strongly in the forward direction, the authors studied **PMMA** soln. in water and solid agar gel. Small amts. of **Rhodamine B** were added in phantoms. Both He-Cd (442 nm) and He-Ne (632.8 nm) lasers were used. The initial results are discussed.

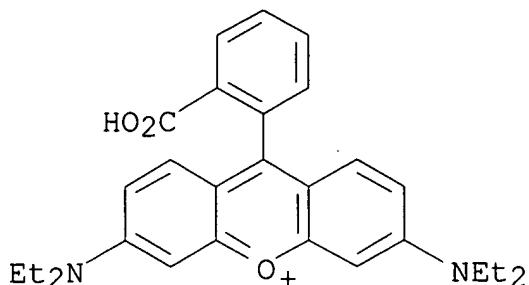
IT **81-88-9, Rhodamine B 9011-14-7**

, **PMMA**

(effect of **optical** properties of **medium** on laser-induced fluorescence study on solns. and gel biol. model)

RN 81-88-9 HCA

CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

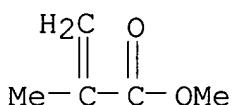
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



CC 9-5 (Biochemical Methods)

Section cross-reference(s): 73

IT Animal tissue

(artificial, phantom, effect of **optical** properties of **medium** on laser-induced fluorescence study on solns. and gel biol. model)

IT Fluorescence

(laser-induced, effect of **optical** properties of **medium** on laser-induced fluorescence study on solns. and gel biol. model)

IT 81-88-9, Rhodamine B 9011-14-7

, PMMA

(effect of **optical** properties of **medium** on laser-induced fluorescence study on solns. and gel biol. model)

IT 9002-18-0, Agar

(gel; effect of **optical** properties of **medium** on laser-induced fluorescence study on solns. and gel biol. model)

L67 ANSWER 9 OF 16 HCA COPYRIGHT 2005 ACS on STN

112:242911 Memory effects in photoelectrochemical systems based on dye-sensitized semiconductors. Sviridov, D. V.; Kulak, A. I. (Inst. Phys.-Chem. Probl., Beloruss. State Univ., Minsk, USSR). Journal of Information Recording Materials, 18(1), 3-13 (English) 1990. CODEN: JIRMEA. ISSN: 0863-0453.

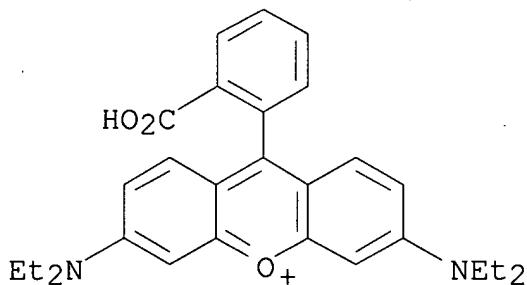
AB The photoelectrochem. memory effects assocd. with photooxidn. or photoreducn. of dyes adsorbed on semiconductor electrode surfaces were investigated. The lifetimes of photogenerated forms of sensitizers were measured by means of a potential modulation technique, and dyes to implement the above memory effects as reversible were found. Sensitized semiconductors are suggested for developing new photoelectrochem. recording systems with the readout by sensing photocurrent or luminescent response, and possible functional characteristics of such systems are estd.

IT **81-88-9, Rhodamine B**

(memory effects in photoelectrochem. system based on semiconductor sensitized by, **information recording** in relation to)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 72

IT Luminescence

Ultraviolet and visible spectra

(of dye-sensitized semiconductor coated with **PMMA**)

IT **Recording** materials

(**optical**, dye-sensitized semiconductor photoelectrochem. systems for)

IT Electrode reaction
(photochem., at dye-sensitized semiconductor, memory effect and **information recording** in relation to)

IT 81-64-1 **81-88-9, Rhodamine B**
581-64-6 2013-77-6, 3,3',9-Triethyl-5,5'-dichlorothiacarbothiacyanine chloride 3028-94-2, 3,3',9-Triethyl-4,5,4',5'-dibenzothiacarbocyanine bromide 127441-41-2
(memory effects in photoelectrochem. system based on semiconductor sensitized by, **information recording** in relation to)

IT 1111-67-7, Copper thiocyanate (CuCNS) 1314-35-8, Tungsten trioxide, uses and miscellaneous
(memory effects in photoelectrochem. system with dye-sensitized electrode of, **information recording** in relation to)

L67 ANSWER 10 OF 16 HCA COPYRIGHT 2005 ACS on STN

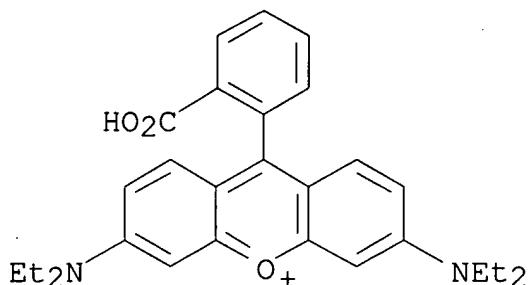
109:139254 **Optical recording medium** from metal complex with high sensitivity, density, and durability. Yoshikawa, Atsuo; Saito, Koichi; Osada, Shiro; Murao, Yuko; Kino, Kanetake (Kuraray Co., Ltd., Japan; Dojin Kagaku Kenkyusho K. K.). Jpn. Kokai Tokkyo Koho JP 62278096 A2 19871202 Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-122852 19860527.

GI For diagram(s), see printed CA Issue.

AB The recording layer contains a metal complex of I [A = arom. ring; R (.gtoreq.1) = alkyl, alkoxy, OH, (substituted) NH₂, halo, NO₂, CN, and/or CO₂H; n .gtoreq. 1]. Thus, a dioxane soln. of II, aq. (NH₄)₂Fe(SO₄)₂, and tetradecyldimethylammonium chloride were mixed to obtain a water-insol. complex, dissolved in CHCl₃, spin coated onto a **PMMA** disk to form a recording layer, irradiated with a semiconductor laser beam (780 nm, 8 mW, 1 MHz), and regenerated with a continuous light (1 mW) giving a clear signal with C/N ratio 45 decibel. The medium was kept at 40.degree., 95% relative humidity for 100 h causing no changes in the recording layer.

IT **81-88-9, Rhodamine B**
(reaction of, with nitroso compd. and Mohr's salt, **optical recording medium** from, for improved sensitivity and durability)

RN 81-88-9 HCA
CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC ICM B41M005-26
ICS B41M005-18; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **optical recording medium** sensitivity
durability; phenol metal complex laser recording; nitroso compd metal complex medium
IT **Recording** materials
 (optical, contg. nitroso compd.-iron complex, for improved sensitivity and durability)
IT 39825-03-1
 (reaction of, **optical recording** **medium** from, for improved sensitivity and durability)
IT **81-88-9, Rhodamine B** 122-18-9,
Hexadecyldimethylbenzylammonium chloride 139-08-2 548-62-9,
Crystal Violet 1188-95-0, Trioctylammonium chloride 2016-48-0,
Dodecyldimethylammonium chloride 2465-29-4, Acridine Red
 (reaction of, with nitroso compd. and Mohr's salt,
 optical recording medium from, for improved sensitivity and durability)

L67 ANSWER 11 OF 16 HCA COPYRIGHT 2005 ACS on STN

108:121925 Application of photopolymers to magnetic recording materials. Improvement in dispersibilities and sensitivity characteristics of photomagnetic polymer. Higuchi, Youichi; Nakamura, Kenichiro (Fac. Eng., Tokai Univ., Hiratsuka, Japan). Nippon Insatsu Gakkaishi, 24(4), 333-41 (Japanese) 1987. CODEN: NIGAEV. ISSN: 0914-3319.

AB Photomagnetic polymers were obtained by dispersing ferrites in photohardening polymers, and their chem. and phys. characteristics were evaluated. These ferrites were then treated by silane coupling reagents for dispersing in the photopolymers. The exptl. results showed that vinylsilane couplers are effective in improving the

dispersion of ferrites in the polymer binder. Me methacrylate and styrene polymers and a com. polymer, were tested as binders. Their sensitivity characteristics were examd. Elec. test signals were recorded and detected using coated samples of the photomagnetic polymers on poly(ethylene terephthalate) films. Magnetic hysteresis curves of the samples were measured and a fairly good magnetic property was obsd.

IT 9011-14-7, PMMA

(ferrite-contg. magneto optical recording material of, with silane coupling agent)

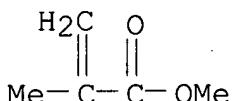
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2

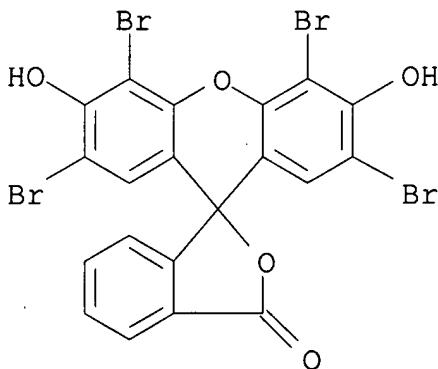


IT 17372-87-1, Eosine Y

(sensitizer, in ferrite-contg. polymeric magnetooptical recording material)

RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA
INDEX NAME)



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST magnetic **optical recording** photopolymer; ferrite polymer magneto-optical recording
IT 9003-53-6, Polystyrene **9011-14-7, PMMA**
73562-25-1, Tevista
(ferrite-contg. magneto-optical recording material of, with silane coupling agent)
IT, 84-65-1, Anthraquinone 94-36-0, Benzoylperoxide, uses and miscellaneous **17372-87-1, Eosine Y**
(sensitizer, in ferrite-contg. polymeric magneto-optical recording material)

L67 ANSWER 12 OF 16 HCA COPYRIGHT 2005 ACS on STN

100:183285 **Optical recording medium.**

Morinaka, Akira; Oikawa, Shigeru; Sato, Hirotugu (Nippon Telegraph and Telephone Public Corp., Japan). Ger. Offen. DE 3319738 A1 19831201, 37 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1983-3319738 19830531. PRIORITY: JP 1982-92634 19820531; JP 1982-111549 19820630; JP 1982-153861 19820906.

AB A multilayer heat-sensitive **optical recording** structure with high light sensitivity which gives multicolored images of high resoln. and contrast consists of a support which is transparent to visible light into the near-IR region, a color agent coating on the support contg. leuco dyes, a light-absorbing layer for a sp. wavelength, on the dye layer, and a developer layer composed of a transparent solid acid. The layer structure may contain several color-agent coatings each assocd. with a light-absorbing layer with wavelength selected for the underlying leuco dye. Thus, a glass support was coated in a Ta boat under a pressure $\text{ltoreq.} 10^{-5}$ torr with Crystal Violet Lactone 2.0 μm ., a light-absorbing layer, and phenolphthalein to give a plate which can be used to give blue images when contacted with a thermal printing head.

IT **9011-14-7**

(color heat-sensitive **optical recording** materials with supports from)

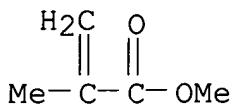
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2

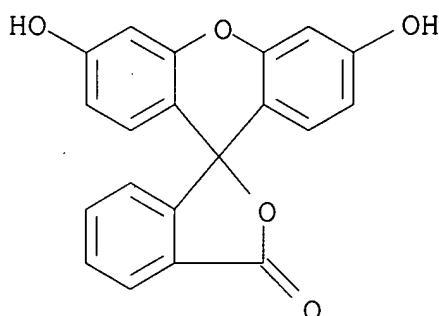


IT 2321-07-5

(color **optical recording** materials with light-absorbing layer contg., heat-sensitive)

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



IC B41M005-18; C23C013-04; C03C017-42

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST heat sensitive **optical recording** material; colored heat sensitive **optical recording**

IT Glass, oxide

Polyesters, uses and miscellaneous (color heat-sensitive **optical recording** materials with supports from)IT Amides, uses and miscellaneous (fatty, N-(hydroxymethyl), color **optical recording** material with color-developing layer contg., heat-sensitive)IT **Recording** materials

(optical, color, heat-sensitive)

IT 9011-14-7 25038-59-9, uses and miscellaneous (color heat-sensitive **optical recording** materials with supports from)

IT 72-48-0 76-61-9 77-09-8 80-05-7, uses and miscellaneous 117-39-5 125-20-2 480-16-0 603-45-2 1733-12-6 3225-30-7 4430-25-5 32638-88-3

(color **optical recording** material with color-developing layer contg., heat-sensitive)

IT 102-06-7 124-26-5 1249-97-4 1552-42-7 5339-80-0 26206-78-0

30378-58-6D, Ph derivs. 87715-08-0 89907-56-2 89946-81-6
 89946-82-7 89963-96-2

(color **optical recording** materials with
 color-forming layer contg., heat-sensitive)

IT 147-14-8 **2321-07-5** 2768-89-0 6439-53-8 14376-21-7
 28984-20-5 47822-79-7 89918-26-3 89918-29-6 89962-82-3
 89962-83-4 97428-30-3

(color **optical recording** materials with
 light-absorbing layer contg., heat-sensitive)

L67 ANSWER 13 OF 16 HCA COPYRIGHT 2005 ACS on STN

100:59653 **Recording media.** Goto, Yasuyuki; Koshino,

Nagaaki; Ogawa, Seiya; Goto, Hironori; Ogawa, Koichi Nichimo Hiyoshi
 (Fujitsu Ltd. , Japan). Eur. Pat. Appl. EP 84729 A1 19830803, 17
 pp. DESIGNATED STATES: R: DE, FR, GB, NL. (English). CODEN:
 EPXXDW. APPLICATION: EP 1982-306843 19821221. PRIORITY: JP
 1981-207862 19811222.

AB A **recording medium** is described suitable for
 prepn. of **optical disks**. The medium which has
 high photosensitivity and can **record information**
 of high quality (high signal-to-noise ratio) comprises (1) a subbed
 transparent support and (2) a recording layer composed of a first
 metal layer, a sublimable org. substance layer, and a second metal
 layer. Thus, a **PMMA** support 1.2 mm thick with a 5 nm
 thick SiO layer was coated with a Te layer 5 nm thick, a Cu
 phthalocyanine layer, and overcoated with a Te layer of 20 nm to
 give a **recording medium** which was subjected to
 recording and reading out test. At speed of 1800 rpm and laser beam
 power 10.5 mW a signal-to-noise ratio of a reprodn. signal from the
 above disk was 46 D vs. 38 D for a control contg. 1 Te layer (20 nm)
 deposited on a Cu phthalocyanine layer.

IT **9011-14-7**

(of **recording disk** contg. supports from, and
 recording layer composed of org. sublimable substance and two
 metallic layers)

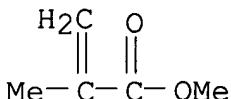
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA
 INDEX NAME)

CM 1

CRN 80-62-6

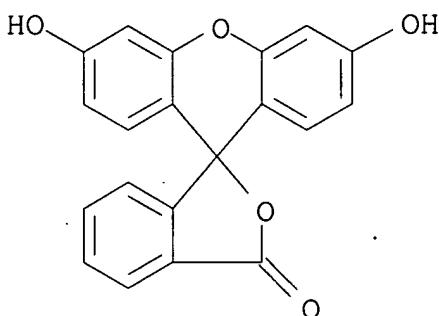
CMF C5 H8 O2



IT **2321-07-5**

(**optical disk** with **recording** layer
 contg. two metallic layers and, for high sensitivity and
 signal-to-noise ratio)

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-
 (9CI) (CA INDEX NAME)

IC B41M005-24; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)ST tellurium copper phthalocyanine **optical disk**;
recording laser **optical disk** telluriumIT **Recording** materials

(**optical, disks**, with **recording**
 layer contg. org. sublimable substance and two metallic layers,
 for high sensitivity and signal-to-noise ratio)

IT 9002-86-2 9003-53-6 **9011-14-7**

(of **recording disk** contg. supports from, and
 recording layer composed of org. sublimable substance and two
 metallic layers)

IT 7439-92-1, uses and miscellaneous 7440-31-5, uses and
 miscellaneous 7440-38-2, uses and miscellaneous 7440-69-9, uses
 and miscellaneous 7440-74-6, uses and miscellaneous 7782-49-2,
 uses and miscellaneous 13494-80-9, uses and miscellaneous

(**optical disk** with **recording** layer
 contg. sublimable org. substance and two metallic layers from,
 for high sensitivity and signal-to-noise ratio)

IT 147-14-8 **2321-07-5** 15187-16-3

(**optical disk** with **recording** layer
 contg. two metallic layers and, for high sensitivity and
 signal-to-noise ratio)

IT 1344-28-1, uses and miscellaneous 7631-86-9, uses and
 miscellaneous 7783-40-6 11126-22-0

(**optical recording disk** with
 subbing layer from)

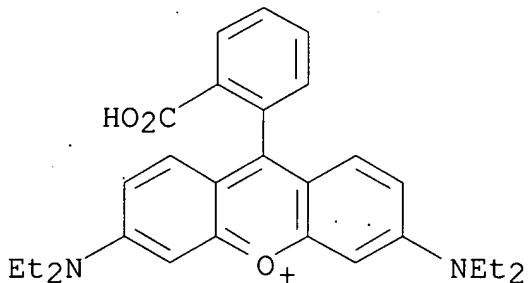
L67 ANSWER 14 OF 16 HCA COPYRIGHT 2005 ACS on STN
 96:77472 Rigid solutions of organic dyes for transient **optical recording**. Tomova, N.; Dragostinova, V.; Nikolova, L.; Radoslavova, I.; Todorov, T. (Cent. Lab. Opt. Storage Process. Inform., Sofia, BG-1113, Bulg.). Journal fuer Signalauzeichnungsmaterialien, 9(5), 373-9 (English) 1981. CODEN: JSZMAE. ISSN: 0323-598X.

AB Photochromic properties of rigid solns. of xanthene, triphenylmethane and other dyes in orthoboric acid, **poly(methyl methacrylate)** and **poly(vinyl alc.)** were investigated. Holog. recording was accomplished on some of the samples with an Ar-laser (continuous operation) and with a pulsed ruby laser. The best characteristics for continuous light **optical recording** were obsd. for xanthene dyes (fluorescein, eosin, **rhodamines B, C and G**) in orthoboric acid. The rigid solns. of org. dyes exhibited high resln. and seem suitable for dynamic holog. recording.

IT 81-88-9 2321-07-5 17372-87-1
 (photochromic properties of rigid matrix contg., dynamic holog. recording in relation to)

RN 81-88-9 HCA

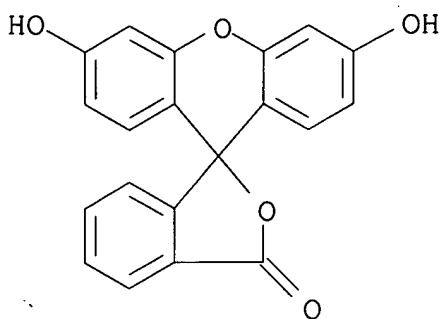
CN Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



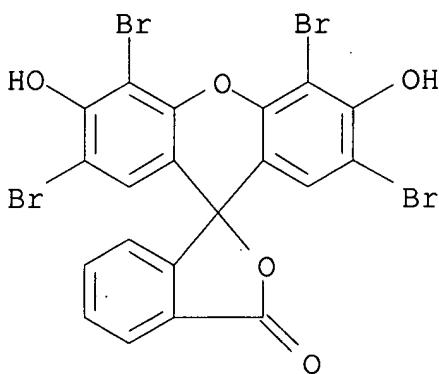
● Cl⁻

RN 2321-07-5 HCA

CN Spiro[isobenzofuran-1(3H), 9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



RN 17372-87-1 HCA

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA
INDEX NAME)

●2 Na

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)IT **Recording**

(optical, rigid solns. of org. dyes for)

IT 65-61-2 **81-88-9** 147-14-8 548-62-9 632-99-5
633-00-1 1328-53-6 **2321-07-5** 2768-89-0 10127-36-3
12627-64-4 **17372-87-1**(photochromic properties of rigid matrix contg., dynamic holog.
recording in relation to)

L67 ANSWER 15 OF 16 HCA COPYRIGHT 2005 ACS on STN

94:183496 Dye-containing layer of a film-forming polymeric binder and
the use thereof in an **information recording**
element. Zwanenburg, Dirk Jan; Nijssen, Wilhelmus Peter Martinus;

Van der Staak, Caspert Gerardus I. (N. V. Philips' Gloeilampenfabrieken, Neth.). Eur. Pat. Appl. EP 23736 19810211, 27 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1980-200690 19800716.

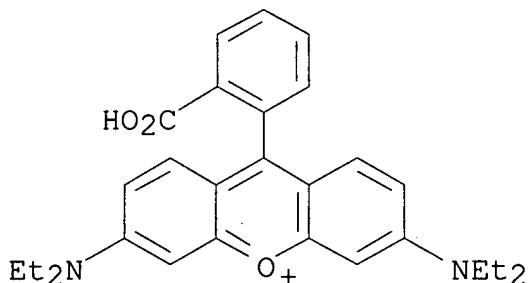
AB Laser write-read recording layers are comprised of an alc. semiester of the Me vinyl ether-maleic anhydride polymer (I) and an ionic dye either in finely divided or dissolved form. Thus, a soln. of 2:1 ratio of BuOH-MeOH contg. the 1-BuOH semiester of the I polymer 20 g and Rhodamine-6G 227 mg and enough solvent to give 0.8 wt.% binder was coated by centrifugation on a **poly(Me methacrylate)** plate and dried to give a recording layer of film thickness 0.13 .mu.m and optical d. 1.18 at 545 nm wavelength.

IT **81-88-9**

(laser recording layer contg. polymer semiester and, for **information storage** and retrieval)

RN 81-88-9 HCA

CN Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IC C08L035-08; G11B007-24; G02B005-20

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT **Information** science

(**storage** and retrieval, dye-polymer layers for)

IT **81-88-9** 989-38-8 13558-31-1 33227-06-4 33968-30-8
47827-22-5 77411-60-0 77411-61-1 77411-62-2 77411-63-3
77418-48-5

(laser recording layer contg. polymer semiester and, for **information storage** and retrieval)

L67 ANSWER 16 OF 16 HCA COPYRIGHT 2005 ACS on STN

81:8433 Direct print-out photographic **optical**

recording media comprising a rhodamine dye.

Harrison, Sol E.; Goldmacher, Joel E. (RCA Corp.). U.S. US 3767408 19731023, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1972-221830 19720128.

AB A uv-sensitive print-out photog. compn. for **optical recording** is consisting of a leuco form rhodamine dye (**Rhodamine B**, **Rhodamine 6 G**, Rhodamine 3 GO or Mordant Red) in a nonpolar polymer binder (polystyrene, polyethylene or **poly(methyl methacrylate)**) at 0.001-0.1 g leuco dye/g polymer. Upon exposure to uv-radiation, a permanently colored image with high resolution is formed. 150-200 mJ/cm² at .1 to < 3300 .ANG. is required to generate an image d. of 1.

IC G03C

INCL 096090000

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)